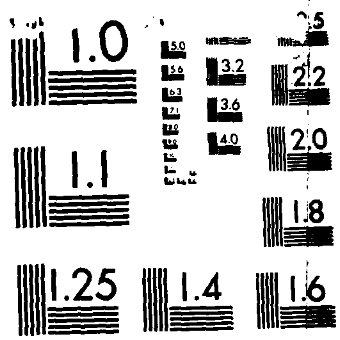
AD-A163 557 1981 HARTWELL LAKE WATER QUALITY STUDY APPENDIX(U) ARMY ENGINEER DISTRICT SAVANNAH GA SEP 82 DACW21-81-C-0008 1/3

UNCLASSIFIED F/G 8/8 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

(12)

APPENDIX

1981 HARTWELL LAKE

WATER QUALITY STUDY

PREPARED SEPTEMBER, 1982

BY

JAMES H. CARR AND ASSOC., INC.

COLUMBIA, S. C.

FOR

U. S. ARMY CORPS OF ENGINEERS

SAVANNAH DISTRICT

SAVANNAH, GEORGIA

CONTRACT DACW 21-81-C-008

CONTENTS

APPENDIX A

HYDROLOGICAL AND METEOROLOGICAL DATA

APPENDIX LIST

APPENDIX A-1

Daily 1981 Maximum and Minimum Temperatures*

Recorded at Anderson County Airport, Anderson, S.C.

Date

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVG.
Jan	MAX	58	53	59	51	38	45	49	46	48	44	42	34	46	53	58	51	44	62	61	55	52	56	58	58	66	67	62	60	66	49	43	52.7
	MIN	32	33	27	32	12	25	34	21	28	22	15	11	20	31	36	30	20	27	26	41	42	42	33	24	27	37	48	38	29	35	22	29.0
Feb	MAX	35	43	38	46	43	49	44	57	51	45	62	37	45	58	65	70	66	58	59	69	72	67	59	64	76	79	72	78				57.4
	MIN	28	33	19	20	18	33	30	41	21	41	29	12	23	33	39	49	54	55	55	50	41	38	45	37	37	39	38	38				35.6
Mar	MAX	73	71	60	60	68	60	58	56	58	61	66	65	68	66	67	61	69	58	50	56	57	50	52	62	68	71	78	71	71	78	84	64.3
	MIN	57	47	39	44	44	33	31	34	35	38	32	30	34	42	30	46	29	45	34	31	38	38	34	34	42	42	49	49	58	50	50	39.3
Apr	MAX	79	81	80	83	70	69	68	78	74	85	84	86	90	83	75	74	76	88	86	86	71	66	84	78	80	86	91	91	80	88		80.3
	MIN	61	43	42	62	59	47	41	48	59	52	59	59	57	56	57	43	56	62	58	66	56	55	63	55	46	49	57	56	60	64		54.9
May	MAX	83	76	78	81	87	92	84	68	74	79	73	70	79	84	72	72	72	87	82	73	80	84	87	88	90	81	80	83	87	92	93	81.0
	MIN	60	38	45	52	45	52	65	57	50	55	60	56	46	54	54	45	58	57	62	54	50	51	55	55	60	68	69	63	57	66	68	54.9
Jun	MAX	81	88	87	89	95	95	87	91	96	97	97	92	96	99	101	100	90	95	99	100	101	99	92	98	90	86	81	86	87	88		93.2
	MIN	70	72	70	71	70	74	74	72	76	77	72	75	73	71	70	72	78	74	73	69	70	76	73	73	70	72	69	64	68	66		71.5
Jul	MAX	77	78	81	88	88	86	89	95	97	98	99	97	96	97	95	95	95	87	90	93	96	93	95	93	91	93	97	96	93	78	72	90.9
	MIN	67	68	70	66	70	70	71	73	75	73	75	73	71	72	73	73	72	75	73	73	74	68	75	73	66	72	71	71	74	66	66	71.2
Aug	MAX	71	81	96	96	95	91	95	88	95	88	91	88	86	88	93	94	80	73	73	74	88	85	[illegible]			[illegible]	87	87	84	87	89	86.7
	MIN	65	65	70	72	74	76	72	74	75	72	67	70	71	72	69	72	70	66	68	67	67						[illegible]	60	72	72	69	68.9
Sep	MAX	87	89	88	83	84	85	82	86	82	82	86	87	88	88	86	86	80	74	73	77	81	85	82	80	82	83	86	[illegible]	82	85		83.5
	MIN	69	69	69	70	67	71	70	68	57	57	58	59	60	62	69	68	55	51	43	46	47	49	57	51	52	50	52	[illegible]	55	63		59.0
Oct	MAX	92	75	71	78	87	93	79	72	65	55	68	67	68	71	74	81	79	71	63	68	73	78	65	55	48	56	72	75	70	59	59	70.5
	MIN	57	60	37	42	47	56	58	49	46	52	54	52	46	43	46	48	56	60	44	33	36	48	55	39	40	47	56	43	52	48	52	48.5

* Data supplied by the National Climatic Center, Asheville, North Carolina

APPENDIX A-2

Daily Rainfall at Hartwell Dam* -1981

(inches)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	0	0.27	0	0.23	0.36	0.12	0	0	0	1.01
2	0	0.46	0	0.02	0	0	0.50	0.12	0	0	0	0.92
3	0	0	0	0	0	0.22	0.24	0	0	0	0	0
4	0	0	0	0	0	0.16	0.02	0	0.26	0	0	0
5	0	0	0.71	0.10	0	0.03	0	0	0.32	0	0	0
6	0	0	0	0.03	0	0.10	0.60	0	0.25	0	0	0
7	0.24	0	0	0	0.10	0.16	0	0.02	1.51	0	0	0
8	0	0	0	0	0.05	0.28	0	0.02	2.13	0	0	0
9	0	0	0	0	0	0	0	0.05	0	0	0	0
10	0	0	0	0	0.10	0	0	0	0	0.40	0	0
11	0	2.72	0	0	1.50	0	0	0.10	0	0.04	0	0
12	0	0	0	0	0	0	0	0.84	0	0	0	0
13	0	0	0	0	0	0	0.01	0.01	0	0	0	0
14	0	0	0	0	0	0.02	0	0	0	0	0	0.70
15	0	0	0	0	0.05	0	0	0	0	0	0	2.15
16	0	0	0	0	0	0	0	0	0.27	0	0	0.34
17	0	0.02	0	0	0	0	0	0	0	0	0	0
18	0	0.22	0	0.02	0	0	0	0.75	0	0.06	0	0
19	0	1.15	0.47	0.04	0.29	0.07	0.24	0	0	0	0	0
20	0	0.14	0	0	0.11	0	0	0	0	0	0.02	0
21	0.20	0	0	0.43	0.06	0	0.03	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0.11
23	0	0.05	0.57	0	0	0	0	0	0	0.20	0	0.05
24	0	0	0	0.12	0	0	0	0	0	1.03	0.46	0
25	0	0	0	0	0	0	0.70	0	0	0.83	0	0
26	0	0	0	0	0	0	0	0	0	0.41	0	1.88
27	0	0	0	0	0.21	0	0.05	0	0	0	0	0.03
28	0	0	0	0	0.78	0	0	0	0	0	0.14	0.01
29	0		0	0	0	0	0	0	0	0	0	0.20
30	0		0.92	0.20	0	0	0.36	0	0	0	0.08	0
31	0.15		0		0		0	0		0		1.80
								0				
Total	0.59	4.76	2.67	1.41	3.27	1.27	3.11	2.03	4.74	2.97	0.70	9.29

*Data supplied by U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia

APPENDIX A-4

Hartwell Lake Total Daily Inflow*

(1981)
(day-second-feet)

Date	Jan	Feb	Mar	Apr	May	Jun
1	1015	1483	2018	4236	2562	6757
2	1014	3729	2065	2853	-253	8014
3	1513	3065	1816	3111	0	6157
4	4035	6162	7475	1286	37	6486
5	5854	1839	3107	4631	975	8212
6	1048	924	4506	4132	1937	1801
7	1448	1453	515	2079	1289	3919
8	911	1453	772	2336	579	2070
9	1077	1896	1537	5733	257	4774
10	1251	11255	2915	2615	1286	1365
11	989	12714	1626	1321	6699	1349
12	1190	6312	1370	1688	647	2861
13	762	4242	4009	3861	1413	1574
14	913	2719	2058	862	879	1049
15	1660	1483	1029	2386	1925	124
16	1178	1971	2040	1383	0	677
17	3373	2309	1345	1653	1286	1179
18	989	8191	3334	2078	2500	572
19	4875	10553	2769	1049	5522	1856
20	2702	4920	1267	1896	6982	772
21	1349	2774	1276	523	3820	257
22	615	3783	2573	1933	1123	2358
23	1905	2555	2502	1782	515	1709
24	1453	2692	1355	1431	257	587
25	1211	2223	1593	515	1736	828
26	3369	3076	1397	257	3771	572
27	2169	2808	1305	734	5810	0
28	3820	1261	515	1498	8690	0
29	3267		1029	2120	5145	6
30	3013		8517	1206	1801	782
31	2864		4902		772	
Total	62832	109,956	71,114	63,188	69,962	68,667
Average	2026.8	3927	2294	2106	2257	2289

* Data supplied by U.S. Army Corps of Enginners, Savannah District, Savannah, Georgia

APPENDIX A-4

(Continued)

Date	Jul	Aug	Sep	Oct	Nov	Dec
1	1560	1004	-377	1339	313	6424
2	3621	252	630	1348	1889	3290
3	1555	1119	1997	541	1457	3375
4	257	795	2075	52	1807	2916
5	2315	2058	217	1839	3612	130
6	3115	116	744	2690	1920	915
7	5272	319	3879	3221	1352	2926
8	1018	82	5989	1817	813	1867
9	2025	242	2984	805	2580	1264
10	4231	446	2167	937	1996	1406
11	1286	1207	4032	215	992	440
12	772	1979	699	1033	2062	1083
13	4338	1082	646	2073	2101	650
14	391	14981	3483	2114	311	5991
15	1807	136	3752	555	537	4893
16	542	594	2695	550	4220	3196
17	511	748	2876	369	1916	1990
18	757	2979	1556	381	3547	2444
19	757	3543	291	559	1456	779
20	2903	4273	251	1921	1262	402
21	2209	3733	-652	2760	209	1753
22	1546	237	3984	814	209	1965
23	720	0	963	1722	1136	1374
24	2474	2566	325	224	2106	1901
25	1513	2415	928	3453	748	5254
26	504	2450	209	4809	192	2451
27	900	-353	473	2922	987	1820
28	2195	1004	2729	1983	1434	1935
29	1884	227	824	2856	963	2134
30	574	227	1772	1537	4186	831
31	0	1005		740		14708
Total	53,552	51,466	52,141	48,179	48,313	82,507
Average	1727	1660	1738	1554	1610	2662

APPENDIX A-5

Hartwell Lake Pool Elevations*

(1981)
(feet above mean sea level)

Date	Jan	Feb	Mar	Apr	May	Jun
1	653.47	652.46	654.34	655.00	654.95	655.01
2	653.42	652.40	654.37	655.06	654.90	655.20
3	653.48	652.22	654.39	655.13	654.90	655.32
4	653.64	652.17	654.63	655.18	654.78	655.41
5	653.50	652.09	654.70	655.36	654.70	655.50
6	653.13	652.00	654.80	655.47	654.60	655.57
7	653.03	652.06	654.82	655.50	654.60	655.72
8	652.99	652.12	654.85	655.54	654.50	655.75
9	652.95	652.05	654.82	655.71	654.51	655.80
10	652.99	652.40	654.82	655.75	654.55	655.72
11	653.03	652.82	654.77	655.80	654.77	655.71
12	652.68	652.79	654.67	655.85	654.70	655.77
13	652.52	652.80	654.72	655.69	654.66	655.83
14	652.48	652.91	654.80	655.56	654.57	655.87
15	652.47	652.97	654.84	655.60	654.55	655.74
16	652.37	652.97	654.83	655.60	654.55	655.63
17	652.46	653.00	654.75	655.56	654.60	655.51
18	652.50	653.30	654.76	655.64	654.44	655.38
19	652.59	653.63	654.61	655.68	654.50	655.30
20	652.45	653.75	654.38	655.70	654.70	655.33
21	652.38	653.86	654.43	655.54	654.65	655.34
22	652.28	654.01	654.53	655.56	654.52	655.23
23	652.28	654.01	654.53	655.53	654.54	655.13
24	652.34	654.04	654.52	655.43	654.55	655.00
25	652.39	654.08	654.52	655.45	654.52	654.88
26	652.36	654.15	654.48	655.46	654.56	654.84
27	652.33	654.21	654.48	655.35	654.56	654.84
28	652.37	654.26	654.50	655.24	654.63	654.84
29	652.40		654.54	655.21	654.72	654.78
30	652.41		654.82	655.00	654.79	654.75
31	652.40		654.90		654.82	

* Data supplied by U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia

APPENDIX A-5

(Continued)

Date	Jul	Aug	Sep	Oct	Nov	Dec
1	654.75	653.43	649.27	647.70	645.88	643.68
2	654.83	653.44	649.00	647.56	645.81	643.60
3	654.83	653.38	648.92	647.56	645.72	643.52
4	654.84	653.20	648.84	647.56	645.65	643.42
5	654.93	652.97	648.85	647.43	645.58	643.42
6	654.88	652.60	648.88	647.35	645.51	643.46
7	654.82	652.26	649.03	647.31	645.56	643.40
8	654.68	652.25	649.09	647.20	645.59	643.38
9	654.51	652.26	649.03	647.04	645.53	643.10
10	654.59	651.97	648.93	647.07	645.44	642.96
11	654.64	651.80	648.91	647.08	645.30	642.77
12	654.67	651.53	648.93	646.92	645.21	642.81
13	654.52	651.28	648.95	646.81	645.12	642.83
14	654.35	650.95	648.95	646.71	645.13	642.95
15	654.14	650.72	648.95	646.54	645.15	643.07
16	654.10	650.63	648.91	646.37	645.15	642.99
17	654.05	650.35	648.87	646.38	645.05	642.91
18	654.06	650.35	648.77	646.39	645.02	642.85
19	654.11	650.42	648.77	646.23	644.88	642.87
20	654.02	650.32	648.77	646.13	644.65	642.89
21	653.92	650.36	648.57	646.07	644.66	642.73
22	653.86	650.37	648.57	645.97	644.67	642.58
23	653.70	650.37	648.44	645.81	644.35	642.42
24	653.61	650.15	648.28	645.81	644.08	642.45
25	653.67	649.92	648.15	645.97	643.74	642.66
26	653.69	649.86	648.15	646.04	643.59	642.76
27	653.55	649.75	648.16	646.02	643.52	642.85
28	653.47	649.70	648.10	645.95	643.59	642.82
29	653.43	649.71	647.96	645.93	643.63	642.80
30	653.39	649.72	647.83	645.84	643.63	642.71
31	653.39	649.55		645.87		642.25

APPENDIX B

WATER CHEMISTRY DATA

APPENDIX LIST

KEY

Appendices B-1 through B-59

L*	Light intensity relative to surface value; measured by submersible photometer
surface*	Light intensity measured at water surface
1* 2*	Field duplicates, analyzed separately
( )	Laboratory duplicates, analyzed separately
3*	Values suspect due to problems with dissolved oxygen meter
_____	Underlined values are laboratory duplicates of value immediately above or below
- -	Blanks indicate no data collected at these depths
-*-	Bad weather prevented sample collection
*C	Contaminated sample
NG	Station located below dam and samples collected when power is not being generated
G	Station located below dam and samples collected when power is being generated
5*	Due to extreme shallowness of station, A* and B* represent surface and bottom values, respectively
A*	Values recorded above the thermocline
B*	Values recorded below the thermocline

APPENDIX B-1

Station # 1

Date: 2-12-81

Depth (m)	Light (%) L*	Light (%) surface*	Temp. (°C) 1*	Temp. (°C) 2*	D.O. (mg/1) 1*	D.O. (mg/1) 2*
0.3	1500	2450	7.1	7.2	11.4	11.5
	950					
2	520		7.1	7.0	11.4	11.4
	280					
4	160		7.0	6.9	11.4	11.4
	81					
6	45		7.0	6.9	11.4	11.5
	27					
8	16.5		7.0	6,9	11.6	11.5
	9.5					
10			7.0	6.9	11.7	11.6
12			7.0	6.9	11.8	11.8
14			7.0	6.9	11.9	11.9
16			7.0	6.9	12.0	12.0
18			6.9	6.9	12.0	12.0
20	0.0		6.9	6.9	12.1	12.1
22			6.9	6.9	12.1	12.2
24			6.9	6.9	12.1	12.1
26			6.9	6.9	12.1	12.0
28			6.9	6.9	12.0	11.9
30			6.9	6.9	11.9	11.8
32			6.9	6.9	11.8	11.7
34			6.9	6.9	11.5	11.6
36			6.9	6.8	11.3	11.5
38			6.9	6.8	10.9	11.4
40			6.9	6.9	10.5	11.2
42			6.9		9.9	
44			6.9	6.9	9.6	10.7
46			6.8		9.6	
			6.8		8.8	
48			6.8	6.9	8.8	10.7

*See key page 13

------------------ LAKE BOTTOM ------------------

APPENDIX B-1

Station # 1

Date: 2-12-81

Depth (m)	pH (std. units) 1*	pH (std. units) 2*	ORP (millivolts) 1*	ORP (millivolts) 2*	Conductivity (µmHos/cm) 1*	Conductivity (µmHos/cm) 2*
0.3	6.4	6.4	158	162	36.0	28.5
2	6.5	6.6	158	160	28.5	43.0
4	6.5	6.6	158	160	48.0	30.0
6	6.5	6.5	158	160	29.0	30.0
8	6.5	6.5	162	160	29.0	30.0
10	6.5	6.5	158	160	29.0	30.0
12						
14						
16						
18						
20	6.4	6.5	158	162	29.0	30.0
22						
24						
26						
28						
30	6.4	6.5	158	160	29.0	30.0
32						
34						
36						
38						
40	6.4	6.5	158	160	29.0	30.0
42						
44						
46						
48	6.4	6.5	158	160	29.0	30.0

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-2

Station # 2 Date: 2-8-81

	Light (%)		Temp. (°C)		D.O. (mg/1)	
Depth (m)	L	surface	1	2	1	2
0.3	940	2150	7.2		13.1	
	470					
2	240		7.2		12.9	
	130					
4	81		7.2		12.8	
	49					
6	33		7.2		12.8	
	23					
8	17		7.2		12.8	
	12.5					
10	9.3		7.2		12.8	
12			7.2		12.8	
14			7.2		12.8	
16			7.2		12.8	
18			7.2		12.8	
20			7.2		12.8	
22			7.2		12.8	
24			7.1		12.8	
26			7.1		12.8	
28			7.1		12.8	
30			7.0		12.7	
32			7.0		12.7	
34			6.9		12.7	
36			6.9		12.7	
38			6.8		12.6	

------------------- LAKF BOTTOM -------------------

*See key page 13

APPENDIX B-2

Station # 2

Date: 2-8-81

Depth (m)	pH (std. units) 1	2	ORP (millivolts) 1	2	Conductivity (µmHos/cm) 1	2
0.3	6.8	6.7	165	170	50.2	30.0
2	6.8	6.7	165	170	30.0	29.5
4	6.8	6.7	167	170	30.0	29.0
6	6.8	6.7	170	170	30.0	29.5
8	6.7	6.7	170	170	30.0	29.5
10	6.7	6.8	170	170	30.0	42.0
12						
14						
16	6.8	6.8	168	170	39.0	29.0
18						
20						
22	6.8	6.7	170	175	30.0	29.0
24						
26						
28	6.7	6.7	172	170	29.5	29.0
30						
32						
34	6.7	6.7	172	170	30.0	29.0
36	---------- LAKE BOTTOM ----------					

*See key page 13

APPENDIX B-3

Station # 3 Date: 2-6-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2	
0.3	1150	2150	6.6	6.8	12.2	12.2	
	510		6.6	6.8	12.4	12.0	
2	200		6.8	6.8	12.6	11.6	
	110		6.8	6.8	12.6	11.2	
4	56		6.8	6.9	12.6	11.0	
	29		6.8	6.9	12.4	11.0	
6	16		6.8	6.9	12.4	11.0	
	8.8		6.7	6.9	12.4	11.0	
8			6.7	6.9	12.3	11.0	
			6.8	6.9	12.0	10.6	
10			6.7	6.9	11.6	9.9	
			6.8	6.9	11.1	9.2	
12			6.8	6.9	8.5	8.5	
			6.6	7.0		8.0	
14				6.9	M	7.5	
			M	6.9	E	6.6	
16			E	6.9	T	6.0	
			T	6.9	E	5.5	
18	0.0		E	6.9	R	5.1	
			R	6.8		5.0	
20				6.9	P	4.4	3
			P	6.8	R	3.5	
22			R	6.8	O	3.1	
			O	6.7	B	2.8	
24			B	6.8	L	2.5	
			L	6.6	E	2.4	
26			E	6.5	M	2.3	
			M	6.6	S	2.2	
28			S	6.6		2.1	
				6.6		2.1	
30				6.6		2.1	

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-3

Station # 3

Date: 2-6-81

<table>
<tr><th></th><th colspan="2">pH
(std. units)</th><th colspan="2">ORP
(millivolts)</th><th colspan="2">Conductivity
(μmHos/cm)</th></tr>
<tr><th>Depth (m)</th><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th></tr>
<tr><td>0.3</td><td>6.6</td><td>6.8</td><td>162</td><td>160</td><td>31.0</td><td>42.0</td></tr>
<tr><td>2</td><td>6.7</td><td>6.7</td><td>158</td><td>160</td><td>30.0</td><td>31.0</td></tr>
<tr><td>4</td><td>6.8</td><td>6.7</td><td>152</td><td>160</td><td>29.5</td><td>30.0</td></tr>
<tr><td>6</td><td>6.7</td><td>6.7</td><td>151</td><td>160</td><td>30.0</td><td>30.0</td></tr>
<tr><td>8</td><td>6.7</td><td>6.7</td><td>150</td><td>160</td><td>30.0</td><td>30.5</td></tr>
<tr><td>10</td><td>6.7</td><td>6.7</td><td>150</td><td>159</td><td>30.0</td><td>30.9</td></tr>
<tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>14</td><td rowspan="2">6.7</td><td rowspan="2">6.7</td><td rowspan="2">152</td><td rowspan="2">160</td><td rowspan="2">30.5</td><td rowspan="2">30.0</td></tr>
<tr><td>16</td></tr>
<tr><td>18</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>20</td><td>6.7</td><td>6.7</td><td>152</td><td>160</td><td>30.9</td><td>30.5</td></tr>
<tr><td>22</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>24</td><td rowspan="2">6.7</td><td rowspan="2">6.8</td><td rowspan="2">152</td><td rowspan="2">163</td><td rowspan="2">41.0</td><td rowspan="2">31.0</td></tr>
<tr><td>26</td></tr>
<tr><td>28</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>30</td><td>6.7</td><td>6.8</td><td>152</td><td>160</td><td>55.0</td><td>49.0</td></tr>
</table>

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-4

Station # 4 | Date: 2-7-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3	38	58	6.3	6.3	13.7	13.8
	19.4		6.3	6.3	13.7	13.8
2	10.5		6.3	6.3	13.7	13.8
	6.2					
4	3.85					
	2.65					
6	2.15		6.3	6.2	13.6	13.7
	1.3					
8	0.85					
	0.50					
10	0.38		6.2	6.2	13.4	13.5
12						
14						
	0.0					
16			6.1	6.0	13.4	13.4

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-4

Station # 4 Date: 2-7-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmHos/cm) 1	Conductivity (μmHos/cm) 2
0.3	6.8	6.3	172	185	48.0	35.7
2	6.8	6.7	170	185	34.0	32.0
4	6.8	6.7	170	180	34.0	32.5
6	6.7	6.7		180	34.5	33.0
8	6.7	6.6	170	180	33.0	33.5
10	6.7	6.6	172	180	34.0	32.0
12	6.6	6.6	170	182	33.5	33.5
14	6.6	6.6	170	180	33.0	32.8
16	6.6	5.5	175	180	32.5	32.8
17.5	6.6	6.6	172	178	34.0	50.5

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-5

Station # 5

Date: 2-7-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3	130	178	6.5	6.6	14.5	14.5
	57		6.5	6.5	14.4	14.5
2	27		6.5	6.4	14.2	14.3
	14		6.4	6.3	14.2	14.2
4	7.8		6.3	6.3	14.2	14.2
	4.5		6.2	6.2	14.2	14.2
6	2.65		6.2	6.2	14.2	14.1
	1.5		6.1	6.2	14.0	14.1

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-5

Station # 5

Date: 2-7-81

Depth (m)	pH (std. units)		ORP (millivolts)		Conductivity (μmHos/cm)	
	1	2	1	2	1	2
0.3	6.5	6.6	145	145	30.0	40.0
2	6.5	6.6	145	155	31.5	31.0
4	6.4	6.4	142	150	30.0	30.0
6	6.4	6.4	145	150	30.0	30.0
	6.4	6.4	142	148	139.4	30.0
8	------------------- LAKE BOTTOM --------------------					

*See key page 13

APPENDIX B-6

Station # 6

Date: 2-8-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3	2150	2700	7.2	7.2	12.9	12.9
	1150		7.1		12.9	
2	640		7.0	7.2	12.9	12.9
	345		7.0		12.9	
4	193		7.0	7.1	12.9	12.9
	110					
6	72		7.1	7.1	12.8	12.9
	42					
8	34		7.0	7.0	12.9	12.9
	24					
10			7.0	7.0	12.8	12.9
12			6.9	7.0	12.8	12.9
14			6.9	7.0	12.8	12.8
16			6.9	6.9	12.7	12.8
18			6.9	6.9	12.7	12.7
20			6.9	6.9	12.7	12.7
22			6.9	6.9	12.7	12.8
24			6.8	6.8	12.8	12.8
26			6.7	6.8	12.8	12.8
28			6.7	6.8	12.8	12.9
30			6.5	6.5	12.9	13.0
			6.4	6.3	13.0	13.0
32			6.3	6.3	12.9	12.9

------------------ LAKE BOTTOM ------------------

*See key page 13

APPENDIX B-6

Station # 6 Date: 2-8-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (µmHos/cm) 1	Conductivity (µmHos/cm) 2
0.3	6.8	6.8	170	162	58.0	60.5
2	6.8	6.8	170	168	30.0	31.0
4	6.8	6.8	172	170	28.5	28.0
6	6.8	6.8	170	170	28.5	28.0
8	6.8	6.8	172	170	28.5	28.5
10	6.8	6.8	172	170	28.5	28.5
12						
14						
	6.8	6.8	170	170	28.5	27.0
16						
18						
20	6.8	6.8	172	170	28.0	28.0
22						
24						
	6.8	6.8	170	170	28.0	28.0
26						
28						
30	6.8	6.8	170	170	28.0	27.5

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-7

Station # 7

Date: 2-5-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3	67	100	5.5		10.8	
	30					
2	10		5.5		11.0	
	1					
4			5.5		11.6	
6			5.3		12.7	
8			5.2		11.8	
10			5.2		11.7	
11.5			5.2		11.4	
12			5.0		11.4	
14						
14.5			5.0		11.2	
15			5.0		10.9	

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-7

Station # 7 Date: 2-5-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	6.6	6.8	165	180	42.8	28.0
2	6.5	6.7	165	178	31.3	35.0
4	6.5	6.6	165	162	23.0	26.0
6	6.4	6.5	158	180	23.7	33.0
8	6.3	6.5	160	172	24.2	28.0
10	6.7	6.4	175	172	25.9	30.0
11.5	6.7	6.4	175	172	24.2	24.8
12	6.7	6.4	170	170	24.1	24.5
14						
14.5	6.7	6.4	168	172	24.2	24.5
15	6.7	6.4	165	163	24.0	172.0

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-8

Station # 8 Date: 2-5-81

	Light (%)		Temp. (°C)		D.O. (mg/1)	
Depth (m)	L	surface	1	2	1	2
0.3	220	480	5.8	5.8	14.2	14.0
	67		5.8	5.8	14.4	14.0
2	22		5.8	5.8	14.3	14.0
	7.8		5.8	5.8	14.0	13.9
4	3		5.8	5.8	14.0	13.9
	2.2		5.8	5.8	14.0	13.8
6			5.8	5.8	13.9	13.9
			5.8	5.8	13.8	13.9
8			5.8	5.8	13.8	13.9
	0.0		5.8	5.8	13.8	13.9
10	------------------- LAKE BOTTOM -------------------					

*See key page 13

APPENDIX B-8

Station # 8

Date: 2-5-81

Depth (m)	pH (std. units) 1	2	ORP (millivolts) 1	2	Conductivity (μmHos/cm) 1	2
0.3	6.5	6.6	172	172 175	41.0	38.5
2	6.6	6.6	172	175	37.5	38.5
4	6.6	6.6	172	175	37.5	38.5
6	6.6	6.6	172	175	37.5	38.5
8	6.6	6.6	172	175	38.5	38.5

------------------- LAKE BOTTOM ---------------------

*See key page 13

APPENDIX B-9

Station # 1

Date: 6-6-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3	420	630	24.0	24.0	8.9	8.6
	285		24.0		8.9	
2	195		24.0		8.9	
	145		23.8		8.8	
4	113		23.5		8.4	
	84		21.7	21.9	8.8	9.0
6	59		21.0		8.5	
	43		20.5		8.2	
8	31		19.9		8.0	
	22.5		18.8		7.8	
10	15.5		18.0	17.8	7.7	
	11.0		17.5		7.3	
12	7.9		15.3		7.2	
	6.3		13.5		7.1	
14			12.3		7.0	
			11.2	11.0	6.9	8.3
16			10.7	10.6	6.9	8.3
			10.2	10.2	6.8	8.3
18			9.7	10.0	6.8	8.1
			9.3	9.5	6.8	8.2
20	1.3		9.0	9.2	6.8	8.4
22						
24			8.7	8.8	6.8	8.7
26						
28						
30			8.2	8.2	6.8	8.4
32						
34						
36						
38						
40			7.2	7.2	6.6	6.8
42						
44			6.8	6.9	6.4	6.6
46						
48	------------------ LAKE BOTTOM ------------------					

*See key page 13

APPENDIX B-9

Station # 1

Date: 6-6-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmHos/cm) 1	Conductivity (μmHos/cm) 2
0.3	6.5	6.6	215	205	45.5	28.0
2	6.6	6.6	201	209	53.0	29.0
4	6.5	6.7	200	207	48.0	29.0
6	6.6	6.6	200	219	46.6	29.0
8	6.6	6.6	201	215	51.5	29.0
10	6.4	6.5	201	215	57.0	29.0
12						
14						
16						
18						
20	6.0	6.1	201	219	45.0	30.0
22						
24						
26						
28						
30	5.9	6.0	202	220	46.0	30.5
32						
34						
36						
38						
40	5.8	5.9	211	219	47.0	30.5
42						
44						
46						
48	5.8	5.9	213	215	49.5	31.5

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-10

Station # 2 Date: 6-6-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3	2000	2500	25.0	25.5	7.8	8.1
	1100		25.5	25.5	8.0	8.1
2	840		25.0	25.0	8.2	8.2
	670		24.8	24.8	8.2	8.3
4	480		24.5	24.8	8.2	8.3
	330		24.3	24.5	8.3	8.3
6	245		24.2	24.0	8.2	8.2
	145		22.9	22.9	8.1	8.0
8	115		21.3	21.8	8.1	8.1
	84		19.1	19.2	7.6	7.7
10	41		18.3	18.3	7.7	7.9
	36		17.5	17.2	7.2	7.0
12	25		16.3	16.4	7.6	7.6
			15.2	15.2	6.8	6.9
14			13.8	13.2	6.6	6.5
			12.0	11.9	5.4	5.3
16			11.0	11.0	5.4	5.4
			10.2	10.2	5.7	5.8
18			9.8	9.8	5.9	6.0
			9.3	9.3	6.2	6.2
20	4		9.1	9.0	6.2	6.3
22						
24						
			8.3	8.2	7.0	7.2
26						
28						
30			8.0	8.0	7.2	7.2
32						
34			7.8		7.2	

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-10

Station # 2 Date: 6-6-81

<table>
<tr><th></th><th colspan="2">pH
(std. units)</th><th colspan="2">ORP
(millivolts)</th><th colspan="2">Conductivity
(µmHos/cm)</th></tr>
<tr><th>Depth (m)</th><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th></tr>
<tr><td>0.3</td><td>6.3</td><td>6.3</td><td>230</td><td>230</td><td>35.0</td><td>33.3</td></tr>
<tr><td>2</td><td>6.5</td><td>6.3</td><td>230</td><td>229</td><td>33.0</td><td>34.0</td></tr>
<tr><td>4</td><td>6.3</td><td>6.2</td><td>230</td><td>226</td><td>35.0</td><td>34.0</td></tr>
<tr><td>6</td><td>6.3</td><td>6.3</td><td>227</td><td>225</td><td>33.0</td><td>33.5</td></tr>
<tr><td>8</td><td>6.1</td><td>6.1</td><td>230</td><td>229</td><td>36.0</td><td>37.3</td></tr>
<tr><td>10</td><td>6.3</td><td>6.0</td><td>228</td><td>230</td><td>36.0</td><td>37.0</td></tr>
<tr><td>12</td><td rowspan="4">5.8</td><td rowspan="4">5.9</td><td rowspan="4">230</td><td rowspan="4">230</td><td rowspan="4">36.0</td><td rowspan="4">34.0</td></tr>
<tr><td>14</td></tr>
<tr><td>16</td></tr>
<tr><td>18</td></tr>
<tr><td>20</td><td>5.8</td><td>5.9</td><td>229</td><td>229</td><td>36.0</td><td>34.5</td></tr>
<tr><td>22</td><td rowspan="4">5.9</td><td rowspan="4">6.4</td><td rowspan="4">222</td><td rowspan="4">225</td><td rowspan="4">35.5</td><td rowspan="4">36.0</td></tr>
<tr><td>24</td></tr>
<tr><td>26</td></tr>
<tr><td>28</td></tr>
<tr><td>30</td><td>6.0</td><td>6.2</td><td>220</td><td>220</td><td>33.0</td><td>34.0</td></tr>
</table>

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-11

Station # 3 Date:6-7-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3	1400	1550	27.0	26.9	8.1	8.1
	1100		26.8		8.1	
2	560		26.7		8.1	
	380		26.1		8.1	
4	190		26.0		8.1	
	130		25.8	25.8	8.1	8.0
6	90		25.1	25.2	8.0	7.9
	57		25.0	24.9	7.9	7.8
8	39		24.2	24.2	7.5	7.4
	23.5		20.8	20.8	5.2	4.9
10	15.5		18.8	18.2	3.9	3.6
			17.0	17.0	2.0	2.1
12			15.3	15.2	1.4	1.1
			14.2	14.5	0.8	0.9
14			13.2	12.8	0.6	0.7
			11.9	11.8	0.9	1.1
16						
18			9.9		3.1	
	0.1					
20			9.3	9.2	3.8	4.0
22						
24						
			8.7	8.5	5.6	5.8
26						
28			8.2		6.0	

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-11

Station # 3

Date: 6-7-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmHos/cm) 1	Conductivity (μmHos/cm) 2
0.3	6.3	6.2	229	230	39.0	36.0
2	6.2	6.2	228	227	35.0	36.5
4	6.4	6.2	225	222	35.0	36.0
6	6.2	6.4	225	220	38.0	39.0
8	6.1	6.2	225	229	37.0	38.0
10	6.2	6.0	225	229	40.0	37.5
12						
14	6.1	6.2	221	225	43.0	45.0
16						
18						
20	6.0	5.8	222	229	41.0	38.5
22						
24	5.9	5.9	221	223	37.0	40.0
26						
28	5.8	6.5	[illegible]	215	37.5	47.0

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-12

Station # 4

Date: 6-7-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3	2050	(2550)	28.8	28.9	8.2	8.1
	1250		28.8	28.8	8.2	8.1
2	695		28.7		8.1	
	415		27.5		8.5	
4	245		26.9		8.6	
	145		26.0	26.0	8.2	7.9
6	88		24.8		6.5	
	51		22.8		4.7	
8	30		20.8		3.6	
	20.5		19.3		2.8	
10			18.2	18.1	2.1	2.0
			17.3	17.3	1.7	1.5
12			16.5	16.3	1.3	1.1
			15.2	14.9	.8	.6
14			14.0	13.8	.6	.4
			12.5	12.5	.6	.6
16			11.3	11.2	1.1	1.3
			10.8	10.8	1.8	2.0
18			10.1	10.0	2.4	2.6
	0.0		9.8	9.8	2.8	3.0
20			9.5	9.4	3.1	3.2
22			9.0	9.0	3.7	3.7

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-12

Station # 4 **Date:** 6-7-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	6.5	6.5	215	240	36.0	37.0
2	6.3	6.5	211	235	35.0	[illegible]
4	6.4	6.5	210	241	36.0	34.0
6	6.0	6.0	215	243	38.0	36.0
8	5.8	5.9	220	248	37.5	39.0
10	5.9	5.8	215	248	39.0	41.0
12	5.7	5.9	220	247	42.0	41.0
14 16	5.9	5.8	218	245	41.0	41.0
18	5.8	5.7	210	240	38.5	40.0
20	5.9	5.7	195	238	37.0	37.0
22	6.2	5.7	198	231	38.0	38.0

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-13

Station # 5 Date: 6-6-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3	480	620	30.0	30.0	8.1	7.8
	330		29.8	29.8	8.0	7.9
2	184		28.8	28.7	8.1	8.0
	107		28.2	28.0	8.0	7.8
4	62		26.8	26.7	7.6	7.2
	31		25.2	25.3	5.6	5.4
6	16.5		24.0	24.3	4.9	4.8
	8.8		23.2	23.2	3.7	3.5
8	1.25		22.0	21.9	1.4	1.4
			20.2	20.1	0.4	0.3

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-13

Station # 5

Date: 6-6-81

Depth (m)	pH (std. units)		ORP (millivolts)		Conductivity (µmhos/cm)	
	1	2	1	2	1	2
0.3	6.4	6.4	228	220	36.0	35.0
2	6.4	6.4	225	218	34.0	34.0
4	6.0	6.0	227	220	33.0	33.0
6	5.9	5.9	227	220	35.0	36.0
8	5.8	5.7	228	221	41.0	41.0

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-14

Station # 6 — Date: 6-6-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3	2300	(2500)	27.2		8.5	8.7
	1650		26.5		8.7	8.5
2	1000		25.5		9.0	
	680		25.2		9.0	
4	480		24.8		9.1	
	335		24.1		9.3	12.0
6	225		23.3	23.3	11.0	12.0
	155		21.2		9.6	12.0
8	115		20.7		9.0	11.5
	83		20.0	20.0	9.2	11.0
10	61		19.5	19.1	8.7	8.7
	44		18.8		8.2	
12	34		17.2		7.4	
	25		15.5	15.8	6.3	6.5
14			14.1	14.0	5.6	5.7
			12.5	12.2	4.9	5.1
16			11.8		4.7	
			11.9		4.8	
18			10.9		5.0	
	1.9		10.5		6.0	
20			10.2	10.2	6.0	7.4
22						
24						
			9.5	9.6	7.2	7.1
26						
28						
30			9.1	9.1	7.4	7.3
32						
			9.0		7.3	
34	-------------------	LAKE BOTTOM	-------------------			

*See key page 13

APPENDIX B-14

Station # 6

Date: 6-6-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (µmHos/cm) 1	Conductivity (µmHos/cm) 2
0.3	5.9	5.9	215	217	30.0	28.0
2	5.9	6.1	211	220	28.0	29.5
4	5.9	6.0	211	220	27.5	29.5
6	5.3	6.3	210	220	30.0	29.5
8	6.2	6.1	212	221	32.0	29.5
10	6.1	5.8	213	220	32.0	34.0
12						
14						
16	5.8	5.9	215	220	31.0	31.0
18						
20						
22	5.9	6.0	215	220	28.5	30.5
24						
26						
28	5.9	5.9	214	222	29.7	30.3
30						
32						
34	5.8	5.9	218	225	33.0	30.0
	-----	-----	LAKE BOTTOM	-----	-----	

*See key page 13

APPENDIX B-15

Station # 7

Date: 6-5-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3	1250	(2150)	27.4	27.4	8.8	8.3
	740		27.0	27.0	8.8	8.5
2	390		25.9	25.7	9.0	9.8
	175		25.0	22.4	9.3	8.8
4	80		24.0	24.7	9.1	8.7
	40		22.8	23.4	8.3	8.3
6	21.5		22.6	23.5	7.4	8.6
			22.8	21.4	6.6	7.8
8			21.6	21.0	6.3	6.9
			21.0	20.5	5.7	6.6
10			19.9	20.5	4.8	6.0
			19.3	20.0	3.8	5.3
12			19.0	19.3	3.3	4.2
			18.1	18.4	2.9	2.9
14			16.8	17.2	1.6	1.8
			15.4	15.9	1.0	1.3
16						
18						
	0.0					
20						

------------------ LAKE BOTTOM ------------------

*See key page 13

APPENDIX B-15

Station # 7 Date: 6-5-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	6.6	6.6	204	202	38.5	33.0
2	6.3	6.5	202	199	31.0	30.3
4	6.1	6.0	202	198	29.0	26.0
6	5.9	5.8	201	195	28.3	26.0
8	5.7	5.8	201	190	34.0	23.0
10	5.8	5.5	200	185	35.0	32.5
12	5.7	5.6	190	188	38.5	54.0
14	5.7	5.6	201	200	42.0	34.0
16	5.7	5.7	202	200	43.0	38.0
18	------------------- LAKE BOTTOM ---------------------					

*See key page 13

APPENDIX B-16

Station # 8

Date: 6-7-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3	980	(1300)	28.9	28.8	8.6	8.4
	400		28.1	28.5	8.5	8.4
2	165		27.5	27.8	8.3	8.3
	85		26.8	26.8	7.6	7.4
4	43		26.5	26.3	7.1	6.8
	19.4		26.2	26.1	6.6	6.4
6	13.0		25.8	25.8	5.9	5.8
			25.2	25.2	4.8	4.5
8			24.3	24.2	2.2	1.9
			22.2	21.9	0.2	0.1
10	~~0.0~~ ----------------	LAKE BOTTOM	----------------			

*See key page 13

APPENDIX B-16

Station # 8 **Date**: 6-7-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	**1**	**2**	**1**	**2**	**1**	**2**
0.3	5.9	6.[illegible]	181	226	35.0	50.[illegible]
2	6.0	6.6	178	220	34.0	52.0
4	[illegible]	6.1	175	227	45.0	40.0
6	6.0	6.[illegible]	175	227	37.0	[illegible]
8	6.8	6.2	170	225	47.0	48.0
	5.8	5.9	178	230	47.0	49.0
10	---------- LAKE BOTTOM ----------					

*See key page 13

APPENDIX B-17

Station # 1

Date: 11-2-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3			18.0	17.9	8.3	8.4
			17.2		8.3	
2			17.1		8.3	
			17.0		8.3	
4			16.9		8.2	
			16.9		8.2	
6			16.9		8.1	
			16.9		8.1	
8			16.9		8.1	
			16.8		8.0	
10			16.8	16.9	8.0	8.0
			16.8		8.0	
12			16.8		8.0	
			16.8		8.0	
14			16.8		8.0	
			16.8		8.0	
16			16.8		8.0	
			16.8		8.0	
18			16.8		8.0	
			16.8		8.0	
20			16.8	16.9	8.0	7.9
22						
24						
			16.7		7.7	
26				16.7		7.8
				16.5		7.4
28				16.2		6.7
				16.0		6.0
30			15.7	15.0	1.5	0.7
			15.0		0.6	
32						
34						
36			11.8		0.1	
38						
40			9.9	9.8	0.1	0.0
42						
44						
			9.1		0.0	
46						
48						
			8.8		0.0	

*See key page 13

------------------- LAKE BOTTOM -------------------

Station # 1 Date: 11-2-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	6.0	6.2	186	196	27.6	26.5
2	6.0	6.2	167	186	26.5	26.2
4	6.1	6.1	167	176	27.0	26.5
6	6.2	6.2	167	186	26.7	26.5
8	6.1	6.2	176	167	26.3	26.4
10	6.1	6.2	176	186	27.1	26.5
12						
14						
16						
18						
20	5.9	6.1	167	176	26.3	26.7
22						
24						
26						
28						
30	6.4	5.9	176	186	29.3	27.7
32						
34						
36						
38						
40	5.5	5.8	176	176	31.9	32.3
42						
44						
46						
48	5.6	6.0	186	176	37.1	34.1

*See key page 13

LAKE BOTTOM

APPENDIX B-18

Station # 2 Date: 11-3-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3			17.2	17.3	8.1	8.0
			17.2		7.9	
2			17.2		7.9	
			17.1		7.9	
4			17.1		7.9	
			17.1		7.9	
6			17.1		7.9	
			17.1		7.9	
8			17.1		7.9	
			17.1		7.9	
10			17.1	17.1	7.7	7.8
			17.1		7.7	
12			17.0		7.7	
			17.0		7.6	
14			17.0		7.6	
			17.0		7.6	
16			17.0		7.6	
			17.0		7.7	
18			17.0		7.7	
			17.0		7.7	
20			17.0	17.0	7.7	7.7
22						
24						
			16.8		7.8	
26				16.8		7.4
				16.6		7.5
28				16.5		5.1
				16.1		1.4
30			15.4	15.2	0.2	0.1
32						
34						
			12.0		0.2	
36						
38						
40			10.8		0.1	
42						
44			9.8		0.1	

*See key page 13

------------------- LAKE BOTTOM -------------------

APPENDIX B-18

Station # 2 Date: 11-3-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmHos/cm) 1	Conductivity (μmHos/cm) 2
0.3	6.5	6.3	235	199	38.5	40.7
2	6.6	6.3	194	216	39.6	40.7
4	6.4	6.6	235	199	38.5	39.6
6	6.5	6.7	205	199	38.5	38.5
8	5.9	6.3	210	226	37.4	40.7
10	6.6	6.1	221	194	37.4	38.5
12						
14						
16						
18	5.8	6.6	201	196	38.5	39.6
20						
22						
24						
26	6.0	[illegible]	188	182	37.4	38.5
28						
30						
32						
34	6.1	6.0	217	221	52.4	51.4
36						
38						
40						
42						
	5.8	6.1	243	213	54.6	50.3
44						

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-19

Station # 3

Date: 11-4-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/l) 1	D.O. (mg/l) 2
0.3			17.8	17.7	6.9	7.7
			17.5		7.0	
2			17.2		7.1	
			17.2		7.0	
4			17.1		6.9	
			17.1		6.9	
6			17.1		6.8	
			17.1		6.9	
8			17.1		7.0	
			17.1		7.1	
10			17.1	17.1	7.0	7.1
			17.0		6.9	
12			17.0		6.9	
			17.0		7.0	
14			17.0		6.8	
			17.0		7.1	
16			17.0		7.0	
			17.0		7.2	
18			17.0		7.1	
			17.0		6.2	
20			17.0	16.9	5.7	5.6
			16.9		5.7	
22			16.9		5.8	
			16.8		5.5	
24			16.6		5.8	
			16.6		5.8	
26			16.4		5.5	
			16.2		4.9	
28			16.2		4.1	
			15.8		0.5	
30			15.5	15.3	0.2	0.2
32			14.0		0.2	

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-19

Station # 3 **Date:** 11-4-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	5.8	5.9	249	241	41.7	40.7
2	5.9	5.9	249	184	40.7	40.7
4	5.9	5.9	249	241	41.7	41.7
6	6.0	5.9	232	241	41.7	41.7
8	5.9	6.0	232	232	42.8	41.7
10	6.0	5.8	259	241	40.7	41.7
12						
	6.0		249		42.8	
14		5.9		152		41.7
16	6.1		223		41.7	
18		6.0		267		41.7
	6.1		214		42.8	
20						
22		5.7		267		41.7
	5.9		275		42.8	
24						
26		5.7		184		43.9
28						
30	---------- LAKE BOTTOM ----------					

*See key page 13

APPENDIX B-20

Station # 4

Date: 11-4-81

Depth (m)	Light (%) L	Light (%) surface	Temp. (°C) 1	Temp. (°C) 2	D.O. (mg/1) 1	D.O. (mg/1) 2
0.3			18.1	17.8	7.7	7.8
			17.5		7.9	
2			17.2		6.8	
			17.0		6.2	
4			17.0		6.3	
			17.0		6.3	
6			17.0		6.3	
			17.0		6.4	
8			17.0		6.5	
			16.9		6.5	
10			16.8	16.8	6.5	6.5
			16.8		6.6	
12			16.7		6.7	
			16.5		6.7	
14			16.4		6.6	
			16.2		6.4	
16			16.2		6.1	
			16.2		6.0	
18			16.1		5.3	

------------------- LAKE BOTTOM -------------------

*See key page 13

Station # 4 Date: 11-4-81

	pH (std. units)		ORP (millivolts)		Conductivity (µmHos/cm)	
Depth (m)	1	2	1	2	1	2
0.3	6.1	6.0	174	184	40.7	40.7
2	6.0	5.9	241	259	40.7	40.7
4	5.9	5.9	241	241	40.7	40.7
6	5.9	5.8	232	241	39.6	39.6
8	5.9	5.9	223	223	39.6	39.6
10	5.9	6.0	241	241	39.6	40.7
12	6.0	5.9	223	241	39.6	39.6
14	5.7	5.9	241	249	39.6	38.5
16	5.8	5.8	223	232	40.7	40.7
18	6.0	5.9	174	249	42.8	41.7

-------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-21

Station # 5

Date: 11-4-81

	Light (%)		Temp. (°C)		D.O. (mg/1)	
Depth (m)	L	surface	1	2	1	2
0.3			17.5	17.6	9.9	9.8
			16.8		9.9	
2			16.2		10.0	
			16.0		9.4	
4			15.9		8.6	
			15.8		8.2	
6	------------------- LAKE BOTTOM --------------------					

*See key page 13

APPENDIX [illegible]

Station # 5

Date [illegible]

Depth (m)	pH (std. units) 1	2	ORP (millivolts) 1	2	Conductivity (umhos [illegible]) 1	[illegible]
0.3	6.6	6.7	184	184	35.[illegible]	[illegible]
2	6.6	6.3	184	223	34.[illegible]	[illegible]
4	6.2	6.4	205	205	36.4	[illegible]
6	6.3	6.0	[illegible]	[illegible]4	[illegible]	[illegible]

---------------- [illegible] BOTTOM ----------------

*See key [illegible]

APPENDIX B-22

Station # 6

Date: 11-4-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3			17.5	17.8	7.7	7.7
			17.2		7.6	
2			17.2		7.4	
			17.1		7.4	
4			17.1		7.2	
			17.1		7.2	
6			17.0		7.3	
			17.0		7.3	
8			17.0		7.3	
			17.0		7.2	
10			17.0	17.1	7.2	7.2
			17.0		7.2	
12			17.0		7.2	
			17.0		7.0	
14			17.0		6.9	
			17.0		6.9	
16			17.0		7.0	
			17.0		7.1	
18			17.0		7.2	
			16.9		7.3	
20			16.9	16.9	7.3	7.3
22						
24						
			16.8	16.8	7.3	7.3
26			16.7		7.2	
			16.6		6.5	
28			16.5		7.0	
			16.4		6.9	
30			16.0		1.1	
			15.0		0.2	
32			14.8		0.2	

------------------- LAKE BOTTOM --------------------

*See key page 13

APPENDIX B-22

Station # 6

Date: 11-4-81

Depth (m)	pH (std. units) 1	pH (std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmhos/cm) 1	Conductivity (μmhos/cm) 2
0.3	6.7	6.3	196	252	38.5	39.6
2	6.5	6.7	190	190	39.6	38.5
4	6.6	6.5	206	218	38.5	39.6
6	6.5	6.6	207	224	38.5	38.5
8	6.4	6.6	190	199	39.6	39.6
10	6.4	6.6	217	199	39.6	39.6
12						
14	6.5	6.6	243	218	39.6	36.4
16						
18						
20	6.7	6.5	226	206	38.5	37.4
22						
24	6.6	6.3	235	207	38.5	38.5
26						
28						
30	5.9	6.3	199	229	64.2	61.0
32						

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-23

Station # 7 | Date: 11-3-81

	Light (%)		Temp. (°C)		D.O. (mg/l)	
Depth (m)	L	surface	1	2	1	2
0.3			17.1		9.3	
			16.1		9.4	
2			15.9		9.5	
			15.6		8.3	
4			15.2		8.2	
			15.0		8.2	
6			15.0		8.1	
			14.8		7.9	
8			14.8		7.9	
			14.7		7.8	
10			14.7		7.6	

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-23

Station # 7 | Date: 11-3-81

Depth (m)	pH (Std. units) 1	pH (Std. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (μmhos/cm) 1	Conductivity (μmhos/cm) 2
0.3	6.8	6.7	258	235	38.5	35.3
2	6.8	6.6	196	229	37.4	36.4
4	6.7	6.7	218	190	35.3	36.4
6	6.5	6.6	190	196	35.3	35.3
8	6.4	6.2	201	194	35.3	35.3
10	6.4	6.6	243	206	35.3	36.4

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-24

Station # 8 Date: 11-4-81

	Light (%)		Temp. (°C)		D.O. (mg/1)	
Depth (m)	L	surface	1	2	1	2
0.3			16.5		8.9	
			16.5		8.9	
2			16.2		8.8	
			15.9		9.0	
4			15.3		8.8	
			14.8		8.3	
6			14.7		7.6	

------------------- LAKE BOTTOM -------------------

*See key page 13

APPENDIX B-24

Station # 8

Date: 11-4-81

Depth (m)	pH (s.d. units) 1	pH (s.d. units) 2	ORP (millivolts) 1	ORP (millivolts) 2	Conductivity (µmHos/cm) 1	Conductivity (µmHos/cm) 2
0.3	6.3	6.8	223	184	41.7	42.8
2	6.9	6.7	205	205	43.9	42.8
4	6.3	6.6	232	205	43.9	43.9
	[illegible].5	6.4	205	223	43.9	43.9
6	LAKE BOTTOM					

*See ... page 13

APPENDIX B-25

August Diel Study
8-6/7-81

Station 1

	1015		1230		1510		1815		2100		0045		0345		0652	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	7.65	26.9	7.60	26.9	7.78	26.9	7.88	26.9	7.88	26.9	7.75	26.5	7.55	26.8	7.40	26.1
1	7.67	26.9	7.65	26.9	7.75	26.9	7.85	26.9	7.85	26.9	7.69	26.1	7.59	26.7	7.40	26.1
2	7.70	26.9	7.55	26.9	7.75	26.9	7.82	26.9	7.82	26.9	7.75	26.1	7.60	26.5	7.40	26.1
3	7.70	26.9	7.58	26.9	7.74	26.9	7.82	26.9	7.82	26.9	7.60	26.1	7.62	26.2	7.40	26.1
4	7.69	26.8	7.33	26.9	7.72	26.8	7.82	26.8	7.82	26.8	7.65	26.1	7.62	26.2	7.45	26.1
5	7.69	26.7	7.58	26.8	7.70	26.6	7.85	26.5	7.85	26.5	7.60	26.1	7.59	26.3	7.45	26.0
6	7.62	26.4	7.51	26.5	7.67	26.4	7.80	26.3	7.80	26.3	7.65	26.1	7.60	26.2	7.35	26.0
7	7.56	25.5	7.48	26.3	7.60	26.1	7.70	26.2	7.70	26.2	7.22	25.0	7.59	26.2	7.40	25.8
8	7.31	25.3	7.51	25.5	7.61	26.0	7.42	25.5	7.42	25.5	7.22	25.0	7.59	25.8	7.35	25.8
9	6.97	24.8	6.95	25.3	7.24	25.1	7.35	25.2	7.15	25.2	6.95	24.9	7.20	25.2	6.95	25.0
10	6.72	24.6	6.65	24.8	6.92	24.8	7.01	25.0	7.01	25.0	6.62	24.7	6.40	24.8	6.45	24.8
11	6.65	22.9	6.00	23.8	6.38	24.3	6.51	24.4	6.51	24.4	5.60	23.1	5.35	22.9	5.25	22.9
12	5.72	20.9	5.15	22.1	5.40	22.9	5.30	22.0	5.30	22.0	4.68	19.8	4.82	20.3	4.85	21.0
13	5.30	19.3	4.52	19.6	4.79	20.3	5.01	20.4	5.00	20.4	4.75	19.0	4.50	19.5	4.75	19.3
14	4.45	18.2	4.98	18.6	5.05	18.8	4.73	18.9	4.70	18.9	4.39	17.9	4.40	18.1	4.45	18.3
15	5.20	17.5	4.65	17.6	5.14	17.8	4.35	17.8	4.36	17.8	5.00	17.0	4.80	17.1	4.30	17.5
16	4.97	16.3	4.86	16.9	5.10	17.0	5.10	17.0	4.40	17.0	-	-	-	-	4.60	16.5
17	4.75	15.5	4.80	15.8	4.86	16.1	3.95	16.1	4.10	16.1	-	-	-	-	3.75	15.2
18	3.91	14.0	4.67	14.8	4.70	15.3	4.15	15.2	3.30	15.2	-	-	-	-	4.25	14.1
19	4.14	13.4	4.43	14.3	2.63	14.4	3.65	14.7	3.65	14.7	-	-	-	-	4.15	13.5
20	3.44	13.1	3.25	13.3	4.10	13.3	4.45	13.5	3.85	13.0	3.50	13.0	3.50	13.1	3.95	12.8
21	4.30	12.0	-	-	-	-	-	-	3.80	12.8	-	-	-	-	-	-
22	4.40	11.5	-	-	-	-	-	-	3.60	12.1	-	-	-	-	-	-
23	4.45	11.0	-	-	-	-	-	-	3.55	11.5	-	-	-	-	-	-
24	4.66	10.5	-	-	-	-	-	-	4.30	10.3	-	-	-	-	-	-
25	4.65	10.2	4.63	10.3	4.49	10.1	4.56	10.5	4.32	10.3	4.70	10.2	4.25	11.1	4.35	10.1
30	5.41	9.1	5.85	9.3	5.23	9.2	5.30	8.9	5.20	8.8	5.15	9.1	5.08	9.7	5.15	9.0
35	5.60	8.4	5.60	8.6	5.61	8.7	5.32	8.7	5.45	8.7	5.49	8.4	5.32	8.8	5.40	8.5
40	5.30	8.1	5.40	8.1	5.65	8.5	5.25	8.3	5.45	8.3	4.81	7.9	5.50	8.5	4.15	8.0
45	4.35	7.9	4.75	7.9	4.61	7.9	4.55	7.9	4.95	8.0	4.00	7.8	4.50	7.8	4.20	7.8
49	4.15	7.8	3.95	7.8	-	-	3.85	7.8	3.60	3.6	3.60	7.8	3.80	7.7	3.80	7.6

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.20	36.2	6.30	35.2	6.69	36.0	6.78	36.0	6.80	35.0	6.85	31.0	6.72	31.0	6.63	31.1
2	6.60	32.8	6.39	33.1	6.60	32.7	6.40	33.2	6.70	32.0	6.52	30.8	6.50	30.6	6.69	30.8
4	6.35	33.0	6.45	31.1	6.60	32.7	6.50	31.8	6.52	32.2	6.42	30.7	6.70	30.8	6.69	30.7
6	6.40	32.4	6.80	33.1	6.80	32.5	6.59	31.5	6.65	31.3	6.50	30.0	6.65	30.8	6.70	31.0
8	6.35	32.9	6.95	33.0	6.70	32.5	6.29	32.0	6.65	31.3	6.49	30.0	-	-	6.61	30.5
10	6.30	33.0	6.60	33.0	5.75	32.0	6.30	32.0	6.52	31.9	6.30	31.0	5.62	31.7	-	-
20	5.90	34.0	5.60	34.4	5.32	33.0	5.80	33.4	-	* -	5.50	32.0	6.62	32.0	5.60	31.9
30	6.00	34.2	5.40	34.0	5.20	32.3	5.80	34.1	-	* -	5.55	31.7	5.62	32.3	5.61	32.0
40	5.85	35.0	5.50	35.0	5.50	32.9	5.80	34.1	-	* -	5.50	32.1	6.41	32.2	6.63	33.1
48	6.05	35.7	5.60	36.1	5.70	34.6	5.55	33.8	-	* -	5.48	33.1	6.70	33.2	5.80	33.8

*Bad Weather

*See key page 13

APPENDIX B-25

(Continued)

Station 1

	pH	COND
Surface	6.40	32.0
Above Thermo (11 meters)	5.90	32.0
Below Thermo (15 meters)	5.60	32.0
Bottom (44 meters)	5.50	34.0

	1015	1230	1510	1815	2100	0045	0345	0652	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	1.0	<1.0	<1.0	<1.0	1.0	2.0	<1.0	<1.0	1.0	<1.0	3.0	4.5
Residue Filt.	22.5	22.0	14.[illegible]	23.0	28.5	20.5	17.5	32.5	36.0	30.5	16.0	34.5
Nitrate/Nitrite	0.10	0.09	0.08	0.07	<0.01	0.08	0.10	0.08	<0.01 <0.01	<0.01	0.08	0.28
Ammonia	0.060	0.05	0.07 0.07	0.07	0.09	0.07	0.06	0.06	0.05	0.05	0.09	0.10
TKN	0.150	0.220	0.170	*	0.250	0.50	0.420	0.210	0.190	0.410	0.540	0.250
Phos	[illegible]	[illegible]	[illegible]	[illegible]	0.023 0.020	0.023	0.023	0.025	0.027	0.050	0.027	0.045 0.05
Alkalinity (pH 4.5)	4.7	4.7	4.7	4.4	4.8 4.9	4.2	4.7	4.4	4.7	4.4	4.7	5.2 5.2
Free CO_2	6.0	6.0	6.0	5.5	2.6	6.5	5.0	5.0	1.7	4.0	9.5	11.0
TOC	2.40 2.38	1.94	2.08	2.67	3.64	2.30	2.28	2.11	2.56	2.39	2.41	1.93 1.94
BOD	-	-	-	-	-	-	-	-	-	-	-	<1
COD	-	-	-	-	-	-	-	-	-	-	-	6.4

*Contaminated

*See key page 13

APPENDIX B-26

August Diel Study
8-7/8-81

Station 2

	0935		1224		1514		1815		2200		0015		0330		0700	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	8.05	26.0	8.09	26.6	8.12	26.8	7.99	26.7	8.25	26.5	8.15	26.5	8.15	26.5	8.10	26.3
1	8.03	26.0	8.09	26.6	8.11	26.7	7.98	26.7	8.25	26.5	8.15	26.5	8.15	26.5	8.10	26.3
2	8.05	26.0	8.10	26.4	8.19	26.4	7.95	26.7	8.22	26.4	8.15	26.5	8.20	26.3	8.15	26.2
3	8.04	26.0	8.12	26.2	8.19	26.2	7.95	26.7	8.22	26.4	8.15	26.5	8.20	26.2	8.15	26.1
4	8.05	26.0	8.15	26.1	8.20	26.2	7.95	26.7	8.22	26.4	8.15	26.5	8.20	26.2	8.12	26.2
5	8.02	25.9	8.12	26.0	8.21	26.2	7.95	26.1	8.44	26.2	8.10	26.3	8.15	26.1	8.10	26.1
6	7.98	25.8	8.05	25.9	8.19	26.1	7.99	25.9	8.20	26.1	8.10	26.2	8.15	26.1	8.09	26.0
7	7.97	25.6	7.75	25.3	8.05	25.7	7.90	25.8	8.10	25.9	8.00	25.8	7.90	25.8	7.88	25.8
8	7.64	25.4	7.38	25.0	7.75	25.6	7.55	25.5	7.45	25.2	7.10	25.0	7.80	25.8	7.74	25.7
9	7.13	24.9	7.11	24.9	7.64	25.4	7.00	25.0	6.90	24.8	6.92	24.9	7.35	25.2	7.20	25.0
10	6.91	24.8	6.51	24.6	7.19	25.0	6.41	24.6	6.58	24.8	6.40	24.8	6.42	24.8	6.32	24.4
11	5.78	24.1	6.05	24.3	5.72	24.1	5.00	23.7	5.85	24.2	5.65	24.1	5.41	23.9	5.48	23.8
12	3.16	21.9	4.32	23.0	4.36	23.2	3.19	22.1	4.15	22.8	4.05	22.8	2.75	21.8	3.20	21.8
13	2.75	20.2	2.54	20.4	2.65	20.5	2.51	19.3	2.25	19.8	2.75	20.1	2.30	20.2	2.20	19.6
14	2.55	19.1	2.32	18.5	2.56	19.1	2.33	18.4	2.20	19.7	2.12	19.1	2.15	19.2	2.10	18.5
15	2.09	17.4	2.07	17.6	2.30	17.5	1.96	17.1	1.99	17.7	1.95	17.8	1.96	17.7	2.15	17.7
16	1.91	16.4	1.94	10.4	1.85	16.2	1.73	16.1	1.75	16.7	1.65	16.2	1.92	16.8	1.80	16.5
17	1.67	15.6	1.66	15.6	1.77	15.4	1.71	14.9	1.70	16.1	1.50	15.8	1.77	16.2	1.78	15.8
18	1.63	14.7	1.71	14.4	1.63	14.8	1.47	14.3	1.50	15.2	1.48	15.0	1.65	15.3	1.65	14.9
19	1.67	13.7	1.64	13.4	1.59	13.8	1.39	13.5	1.38	14.2	1.60	14.4	1.48	14.2	1.48	14.0
20	1.65	13.0	1.58	12.8	1.77	12.6	1.69	12.6	1.70	13.8	1.21	13.7	1.48	13.2	1.50	12.9
21																
22																
23																
24																
25	3.46	9.9	3.40	10.1	3.40	10.1	3.88	9.90	2.80	10.2	2.39	10.2	2.15	10.5	2.48	10.2
30	4.24	8.7	4.21	8.8	4.31	8.9	4.30	8.70	3.99	8.8	2.82	8.9	4.20	9.0	4.30	8.9
35	3.73	8.2	3.67	8.2	3.90	8.3	3.83	8.10	3.80	8.2	3.60	8.1	4.00	8.3	4.05	8.2
40	3.74	7.8	3.89	7.9	3.85	7.9	3.85	7.80	3.70	7.8	3.70	7.8	3.75	8.1	3.72	8.1

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.59	31.1	6.79	31.0	6.80	31.0	6.83	30.7	6.40	32.0	6.78	30.7	6.82	30.9	6.60	30.9
2	6.63	30.7	6.65	30.1	6.80	31.0	6.88	30.1	6.60	31.9	6.77	30.1	6.50	31.0	6.80	31.0
4	6.72	31.0	6.72	30.1	6.79	31.0	6.82	31.1	6.62	31.8	6.63	31.1	6.82	31.0	6.70	31.0
6	6.52	31.4	6.70	30.0	6.70	31.0	6.50	31.5	6.50	32.2	6.40	32.0	6.60	31.7	6.70	31.6
8	6.50	32.2	6.40	33.0	6.50	32.5	6.60	32.2	6.30	33.0	6.32	33.0	6.20	33.0	6.45	32.0
10	6.15	32.9	5.90	32.0	6.32	33.0	6.22	33.3	6.12	34.1	5.90	35.0	6.20	34.2	6.12	33.9
18	5.50	35.5	5.60	35.1	5.60	35.9	5.68	35.9	5.50	35.4	5.60	33.9	5.53	35.0	5.50	35.4
26	5.60	34.0	5.60	32.6	5.62	34.4	5.52	34.7	5.50	34.3	5.50	33.6	5.42	33.9	5.49	33.8
34	5.50	34.4	5.60	34.5	5.60	34.0	5.55	34.2	5.50	34.0	5.50	32.2	5.52	34.0	5.52	32.5
42	5.50	33.5	5.62	34.4	5.62	34.3	-	-	5.52	33.1	5.50	34.1	5.60	33.0	5.59	32.1

*See key page 13

APPENDIX B-26

(Continued)

Station 2

	pH	COND
Surface	6.4	32.5
Above Thermo (11 meters)	5.9	35.0
Below Thermo (15 meters)	5.6	35.0
Bottom (43 meters)	5.5	32.0

	0935	1224	1514	1815	2200	0015	0330	0700	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	<1.0	<1.0	<1.0	2.0	<1.0	1.0	<1.0	1.0	1.0	2.5	1.0	10.5
Residue Filt.	31.0	25.0	15.0	31.0	17.5	29.5	14.0	25.5	20.5	30.0	28.0	23.0
Nitrate/Nitrite	0.120	0.120	0.190	0.110	0.110	0.120	0.120	0.120	0.030	0.040	0.160 0.170	0.240
Ammonia	0.140	0.150	0.060	0.070	0.050	0.050	0.070	0.070	0.080	0.070	0.070	0.070
TKN	0.320	0.210	0.240	0.350	0.150	0.200	0.380	0.860	0.170	0.200	0.280 0.330	0.440
Phosphate Total	0.028	0.092	0.014	0.014	0.022	0.028	0.022	0.015	0.014	0.021		0.028
Alkalinity (pH 4.5)	5.2	5.2	5.1	4.4	4.2 4.3	4.2	4.2	4.6	4.6	4.2	4.2	4.2 4.2
Free CO_2	8.5	7.0	7.0	4.5	7.0	6.8	8.5	6.0	3.6	7.5	8.5	11.0
TOC	2.96	2.26	2.08 2.00	2.02	2.15	2.17	1.96	2.19	2.04 2.04	1.90	1.86	1.71
BOD	-	-	-	-	-	-	-	-	-	-	-	<1
COD	-	-	-	-	-	-	-	-	-	-	-	9.2

*See key page 13

August Diel Study
7-30/31-81

Station 3 7/30/81

	0900		1208		1508		1808		2120		0015		0400		0630	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	8.30	28.3	8.40	28.3	8.55	28.1	8.55	27.8	7.80	27.9	7.92	27.2	7.50	27.5	7.60	27.5
1	8.30	28.2	8.30	28.3	8.55	28.2	8.53	28.0	7.85	27.9	7.82	27.5	7.50	27.7	7.60	27.2
2	8.30	28.2	8.30	28.3	8.51	28.2	8.52	28.0	7.82	27.9	7.80	27.5	7.50	27.7	7.55	27.2
3	8.35	28.2	8.30	28.2	8.50	28.2	8.50	28.0	7.84	27.9	7.80	27.6	7.50	27.7	7.55	27.2
4	8.30	28.2	8.30	28.2	8.50	28.2	8.51	28.0	7.81	28.0	7.80	27.6	7.50	27.7	7.55	27.2
5	8.30	28.2	8.30	28.2	8.45	28.2	8.50	28.0	7.81	28.0	7.80	27.5	7.60	27.5	7.60	27.1
6	8.30	28.2	8.20	28.2	8.49	28.2	8.45	28.0	7.81	28.0	7.72	27.5	7.65	27.7	7.60	27.1
7	7.80	28.0	6.90	26.9	7.10	26.8	7.10	26.8	5.90	26.2	5.70	26.2	4.70	25.2	7.50	27.0
8	4.85	25.3	4.80	24.9	5.20	25.3	4.95	25.3	4.40	25.1	3.70	24.8	3.15	24.2	3.25	24.5
9	3.35	24.6	3.95	24.1	3.80	24.3	2.75	24.2	2.40	24.0	1.60	23.0	1.20	23.1	2.50	23.2
10	3.20	23.5	1.65	23.0	2.53	23.3	2.42	23.2	1.21	22.8	0.20	21.1	0.30	21.1	0.50	21.8
11	1.05	22.8	0.65	21.9	0.28	22.0	0.30	21.5	0.20	20.7	0.20	19.8	0.30	19.9	1.20	19.5
12	0.15	20.9	0.10	20.1	0.39	20.6	0.22	19.6	0.45	19.1	1.10	18.3	0.20	18.2	0.40	18.2
13	0.10	18.9	0.10	18.7	0.13	19.0	0.10	18.5	0.21	17.7	0.30	17.0	0.20	16.9	2.30	17.1
14	0.08	17.9	0.10	17.9	0.12	18.1	0.33	17.2	0.40	16.8	0.30	16.2	0.60	16.5	2.10	16.5
15	0.06	16.9	0.09	16.9	0.10	16.9	0.10	16.3	0.20	16.1	0.40	15.2	0.25	15.2	1.70	15.4
16	0.06	15.9	0.10	15.9	0.10	16.0	0.10	15.6	0.15	15.2	0.20	14.5	0.20	14.1	1.55	14.4
17	0.05	14.8	0.08	14.9	0.10	14.6	0.10	14.6	0.15	14.0	0.20	13.6	0.20	13.5	1.40	13.2
18	0.05	14.0	0.09	14.6	0.10	13.8	0.10	13.7	0.15	13.0	0.10	12.8	0.10	12.8	0.30	13.0
19	0.05	12.5	0.09	13.2	0.10	12.8	0.10	12.5	0.15	12.2	0.20	12.0	0.20	12.0	0.20	12.2
20	0.05	12.0	0.09	12.2	0.09	11.9	0.08	11.8	0.20	11.9	0.40	11.5	0.30	11.2	0.40	11.7
21	0.42	11.2	0.35	11.3	0.61	11.3	0.60	11.1	0.61	11.1	0.80	11.0	-	-	1.20	10.9
22	1.15	10.8	0.85	10.9	1.05	10.9	1.25	10.7	1.10	10.8	1.40	11.7	-	-	1.88	10.3
23	1.65	10.3	1.30	10.7	1.45	10.3	2.03	10.1	1.61	10.4	2.30	11.0	-	-	2.60	10.0
24	2.05	10.1	1.85	10.2	2.50	10.0	2.80	9.9	2.30	10.1	2.70	9.9	-	-	-	-
25	2.95	9.8	2.80	9.9	3.24	9.8	3.20	9.7	2.90	9.9	3.30	9.8	3.00	9.8	3.40	9.6
26	3.50	9.7	3.60	9.6	3.74	9.5	3.93	9.3	3.80	9.5	3.60	9.5	-	-	3.95	9.2
27	4.00	9.3	3.80	9.4	4.13	9.3	4.34	9.2	4.10	9.2	4.25	9.2	-	-	4.30	9.1
28	4.40	9.2	4.21	9.2	4.45	9.2	4.50	9.1	4.20	9.1	4.42	9.0	-	-	-	-
29	4.35	9.0	4.49	9.1	4.49	9.1	4.24	9.0	4.15	9.0	4.42	8.9	-	-	4.50	8.9
30	4.05	8.8	3.96	8.9	4.10	9.0	4.29	8.9	3.65	8.9	4.00	8.8	4.02	8.8	4.30	8.8

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.10	31.0	5.60	31.5	5.30	32	5.30	30.0	7.30	31.0	6.79	32.5	6.30	31.5	6.68	31.0
2	6.60	32.0	5.90	29.7	5.50	31.5	5.60	29.9	7.30	26.0	6.80	30.2	6.33	32.0	6.30	32.0
4	6.35	32.0	5.85	31.5	5.70	31.9	5.70	30.0	7.35	27.0	6.70	31.9	6.33	32.0	6.25	32.0
6	6.10	32.0	6.00	32.0	5.75	31.8	5.80	30.5	7.30	24.0	6.10	33.0	6.35	32.0	6.23	32.0
8	5.80	33.0	5.70	29.7	5.80	33.0	5.80	32.0	6.45	26.5	5.92	33.0	5.72	35.0	5.60	35.0
10	5.90	36.0	5.90	35.0	5.20	25.8	5.20	32.0	6.30	29.0	6.30	34.9	5.78	36.0	5.40	38.0
15	5.60	44.0	5.05	39.0	5.10	42.5	5.10	38.5	6.20	33.0	6.20	36.0	5.70	38.0	5.40	36.0
20	5.50	40.0	5.70	37.0	5.10	41.5	5.10	38.8	6.30	34.0	5.90	40.0	5.65	42.5	5.45	42.0
25	5.60	33.0	5.70	30.0	5.20	35.0	5.20	32.5	5.95	29.0	5.80	34.2	5.62	35.0	5.45	35.0
30	5.45	32.0	5.50	32.0	5.10	34.5	5.10	32.0	6.00	27.5	5.88	31.9	5.65	33.0	5.50	33.0

*See key page 13

Station 3

	pH	COND
Surface	7.30	34.0
Above Thermo (7 meters)	6.45	40.0
Below Thermo (11 meters)	6.30	39.0
Bottom (31 meters)	6.00	35.0

	0900	1208	1508	1808	2120	0015	0400	0630	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	3.0	<1.0	<1.0	1.5	3.0	<1.0	<1.0	<1.0	1.0	2.5	1.0	31.0
Residue Filt.	27.5	34.0	31.5	27.0	27.0	33.0	27.5	27.0	21.0	29.0	34.0	37.5
Nitrate/Nitrite	0.06	0.06	0.06	0.07	0.10	0.07	0.10	0.09 0.09	0.03	0.03	0.05	0.25
Ammonia	0.18	0.09	0.13 0.13	0.14	0.08	0.12	0.10 0.0[illegible]	0.10	0.07	0.10	0.14	0.21
TKN	0.34	0.33	0.36	0.36	0.28 0.28	0.42	0.4[illegible]	0.34	0.28	0.22	0.29	0.41
Phosphate Total	0.040	0.020	0.023	0.020 0.025	0.020	0.020	0.025	0.025	0.023	0.050	0.023	0.008
Alkalinity (pH 4.5)	6.20	6.20	5.40	5.70 5.70	5.70	5.20	5.20	5.20	4.70 4.70	5.70	6.70	4.10
Free CO_2	13.5	13.0	11.0	12.0	2.4	7.0	10.5		0.6	3.7	7.0	9.5
TOC	2.50	3.56	2.19	2.08 2.12	2.55	2.05	2.97	2.59	5.22	2.47 2.57	2.35	1.89
BOD	-	-	-	-	-	-	-	-	-	-	-	1.5
COD	-	-	-	-	-	-	-	-	-	-	-	[illegible]

*See key page 13

APPENDIX B-28

August Diel Study
8-4/5-81

Station 4

	0915		1215		1500		1805		2045		0221		0342		0605	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	7.60	26.3	7.79	27.0	7.93	26.0	8.05	27.2	8.20	27.3	8.09	27.2	8.02	27.0	7.90	26.9
1	7.60	26.2	7.79	26.8	7.93	26.9	8.09	27.1	8.15	27.2	8.02	27.1	8.00	27.0	7.90	26.9
2	7.57	26.1	7.81	26.3	7.91	26.9	8.07	27.0	8.15	27.1	8.02	27.1	7.99	27.0	7.75	26.5
3	7.60	26.0	7.87	26.2	7.91	26.3	8.01	26.4	8.18	26.3	7.92	26.7	7.82	26.7	7.20	26.1
4	7.42	25.9	7.49	25.8	7.80	25.7	8.04	26.1	8.00	26.0	6.77	25.8	7.50	26.2	6.20	25.8
5	6.78	25.6	6.80	25.7	7.20	25.6	7.31	25.7	7.15	25.8	6.22	25.4	7.00	25.9	6.15	25.8
6	6.33	25.4	6.35	25.3	6.57	25.5	6.40	25.5	6.30	25.6	6.20	25.4	6.40	25.7	6.20	25.8
7	6.58	25.3	6.80	25.1	6.40	25.3	6.91	25.2	6.28	25.2	6.25	25.5	6.21	25.2	5.69	25.0
8	6.71	25.0	6.74	24.9	6.81	24.9	6.90	25.0	6.55	25.1	6.39	25.2	5.90	25.0	5.30	24.8
9	5.81	24.7	6.11	24.7	6.40	24.7	5.91	24.9	6.10	24.8	4.02	24.3	4.89	24.9	2.80	24.1
10	3.18	24.0	4.05	24.0	5.07	24.2	3.62	24.5	4.49	24.2	2.62	23.9	2.45	24.0	0.95	23.1
11	0.67	23.0	1.22	22.9	1.50	23.2	1.34	23.3	1.10	23.1	0.35	21.0	1.00	23.0	0.18	21.5
12	0.50	20.9	0.14	21.3	0.41	21.2	0.19	21.9	0.18	21.2	0.10	20.7	0.30	21.2	0.10	19.8
13	0.62	19.2	0.64	19.9	0.42	19.8	0.16	20.1	0.10	20.0	0.10	19.8	0.19	19.9	0.10	19.0
14	0.14	18.3	0.48	18.8	0.21	18.8	0.05	19.0	0.10	19.1	0.10	18.5	0.10	18.8	0.10	17.9
15	0.02	17.8	0.07	17.9	0.04	18.0	0.05	18.1	0.10	18.2	0.05	17.5	0.10	17.7	0.10	16.8
16	0.02	16.5	0.04	16.9	0.04	17.0	0.02	17.0	0.10	17.2	0.05	16 2	0.10	16.5	0.10	16.0
17	0.01	15.5	0.04	15.7	0.04	15.9	0.03	15.9	0.10	15.2	0.08	15.9	0.10	15.8	0.10	15.0
18	0	14.9	0.03	15.0	0.03	15.2	0.02	15.1	0.10	15.1	0.08	15.2	0.10	15.0	0.10	14.8
19	0	13.7	0.03	14.3	0.04	14.3	0.04	14.9	0.10	15.0	0.05	14.3	0.10	14.3	0.10	14.2

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.50	38.0	5.81	37.0	5.90	36.0	6.15	36.1	6.23	36.0	6.52	35.0	6.30	35.9	6.60	34.2
2	6.12	35.5	5.70	35.5	5.90	35.0	6.50	34.5	6.50	33.0	6.60	33.7	6.35	33.0	6.70	33.4
4	6.12	34.5	5.65	34.6	5.71	34.2	6.00	34.0	6.20	33.2	6.40	33.0	6.40	33.0	6.50	36.0
6	6.00	35.2	5.85	35.4	5.55	35.0	5.70	34.2	6.10	33.2	6.33	33.3	6.20	33.3	6.40	33.1
8	6.20	36.0	5.82	35.4	5.73	35.9	5.75	35.0	6.05	33.4	6.30	34.0	6.20	34.0	6.30	34.0
10	5.81	37.1	5.70	37.9	5.45	37.0	5.62	36.2	6.00	34.3	6.00	36.0	6.00	36.5	6.49	34.5
12	5.70	39.9	5.30	39.8	5.25	39.0	5.40	38.0	5.80	38.0	5.92	38.2	5.95	39.5	6.55	41.5
14	5.72	41.0	6.15	40.2	5.70	41.0	5.30	41.5	5.81	40.8	5.83	41.0	5.90	41.9	6.20	44.3
16	6.00	47.5	5.70	47.4	5.71	48.5	5.42	46.5	5.90	46.0	5.95	46.0	5.85	48.1	5.99	48.0
18	6.00	52.8	5.42	52.3	5.71	52.2	5.55	54.5	5.90	49.0	5.81	49.0	5.80	49.5	5.80	50.2

	pH	COND
Surface	6.20	35.0
Above Thermo (9 meters)	5.75	34.0
Below Thermo (12 meters)	5.40	36.0
Bottom (20 meters)	5.90	45.5

*See key page 13

APPENDIX B-28

(Continued)

Station 4

	0915	1215	1500	1805	2045	0021	0342	0605	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	<1.0	1.0	2.0	1.0	<1.0	1.0	2.0	<1.0	3.5	1.5	1.0	27.0
Residue Filt.	3.5	26.0	24.0	24.5	24.0	29.5	21.0	20.0	24.0	31.5	26.0	60.5
Nitrate/Nitrite	0.030	0.030	0.030	0.025	0.010	0.025	0.025	0.010	<0.010	0.020	0.70	0.030 0.040
Ammonia	0.130	0.130	0.130	0.100	0.100	0.130	0.150	0.130 0.120	0.110	0.100	0.040	0.270
TKN	0.520	0.300	0.250	0.490	0.430	0.560 0.510	0.490	0.770	0.200	0.320	0.390	0.650
Phosphate Total	0.013	0.006	0.027	0.015	0.014 0.012	0.012	0.006	0.006	0.002	0.012	0.006	0.065
Alkalinity (pH 4.5)	6.9	6.7	6.2	6.2	6.9 6.9	6.9	6.9	7.2	6.2	6.4	6.2	12.6 12.3
Free CO_2		14.0	12.5	13.0		8.5	11.0	6.5	7.5	11.5		25.0
TOC	2.59	7.96	1.98	2.08 2.08	4.34	2.47	2.45	2.40	2.31	2.03	1.87 1.89	3.40
BOD	-	-	-	-	-	-	-	-	-	-	-	2
COD	-	-	-	-	-	-	-	-	-	-	-	13.6

*See key page 13

August Diel Study
8-2/3-81

Station 5

DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	7.89	26.7	8.15	27.3	8.11	28.8	8.33	28.9	8.40	28.8	8.10	28.0	8.02	27.2	8.0	27.1
1	7.90	26.7	8.20	27.1	8.29	28.3	8.38	28.9	8.34	28.4	8.20	27.0	8.15	27.0	7.99	27.0
2	7.89	26.4	8.15	26.7	8.38	27.0	8.45	27.4	8.49	27.1	8.20	26.5	8.15	26.2	8.09	26.8
3	7.85	26.2	8.05	26.4	8.30	26.7	8.41	26.8	8.40	26.8	8.09	26.0	7.99	25.9	7.95	26.2
4	7.58	26.1	7.98	26.2	8.25	26.4	8.02	26.2	8.00	26.1	7.70	26.5	7.58	26.6	7.60	25.8
5	7.29	25.8	7.49	26.0	7.12	26.0	7.39	25.9	7.30	25.8	7.91	25.2	6.95	25.2	7.00	25.3
6	6.71	25.5	6.61	25.7	6.55	25.6	6.50	25.5	6.60	25.5	6.25	25.1	6.30	25.1	6.45	25.1
7	6.34	25.4	5.98	25.4	5.90	25.3	6.02	25.4	5.52	25.3	5.50	24.9	5.10	25.0	5.49	24.9
8	6.11	25.4	5.12	25.3	4.55	25.1	4.82	25.2	4.70	25.2	5.05	24.9	1.8	24.4	3.9	24.8

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.00	32.2	6.31	30.3	6.10	30.5	6.41	32.0	6.35	34.2	6.22	34.0	6.40	34.5	6.40	32.9
2	6.10	30.0	6.25	29.1	6.05	29.5	6.40	29.5	6.35	30.0	6.20	30.0	6.50	30.4	6.90	31.0
4	6.20	29.5	6.00	29.5	6.10	29.8	6.10	29.0	6.00	30.5	6.00	29.4	6.10	30.0	6.30	31.0
6	6.00	30.0	5.90	29.2	5.60	30.0	5.60	29.1	5.90	29.9	6.00	29.5	6.00	29.8	6.10	30.4
8	5.30	29.3	6.00	29.9	8.50	30.0	5.70	29.0	5.75	28.9	5.05	24.9	5.75	31.3	5.90	31.2

	pH	Cond
Surface	6.40	31.5
Mid Depth (4 meters)	6.00	31.5
Bottom (8 meters)	5.80	30.5

	0918	1220	1508	1809	2100	0001	0300	0618	Surf	Mid	Bottom
Residue Non Filt.	2.0	5.5	6.0	4.0	12.0	1.0	8.5	2.0	3.0	1.0	*
Residue Filt.	23.0	23.5	24.0	30.0	34.5	26.5	22.0	28.0	23.5	20.5	24.0
Nitrate/Nitrite	0.025	0.025	0.020	0.010	0.025	0.025	0.025	0.030	0.027 0.030	0.050	0.050
Ammonia	0.110	0.120	0.100	0.110	0.100	0.110	0.110	0.120	0.060	0.110	0.120
TKN	0.330	0.300	0.310	0.310	0.550	0.540	0.520	0.500	0.060 0.320	0.350	0.280
Phosphate Total	0.025	0.025	0.035	0.038	0.035	0.010	0.035	0.038	0.026	0.060	0.550
Alkalinity (pH 4.5)	6.2	5.7	5.7	5.7	5.2 5.4	5.2	5.4	5.7	0.025 5.9	5.4	0.060 5.7 5.9
Free CO_2	11.5	8.0	9.0	11.1	9.5	10.0	4.1	5.5	4.0	9.0	
TOC	2.15	3.41	2.47	2.19	4.38	3.50	2.50	3.41	4.47	4.60	11.2
BOD	-	-	-	-	-	-	-	-	-	-	<1
COD	-	-	-	-	-	-	-	-	-	-	5.2

* Sample leaked

*See key page 13

APPENDIX B-30

August Diel Study
8-3/4-81

Station 6

	0918		1236		1529		1840		2058		0020		0305		0641	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	7.21	25.4	6.93	25.5	7.27	25.8	7.41	25.8	7.60	25.9	7.20	25.8	7.09	25.8	7.10	25.5
1	7.10	25.5	6.93	25.6	7.30	25.8	7.41	25.8	7.70	25.9	7.30	25.8	7.05	25.8	6.99	25.5
2	7.20	25.5	6.90	25.6	7.30	25.8	7.41	25.8	7.75	25.9	7.10	25.8	7.00	25.8	7.05	25.5
3	7.10	25.5	6.99	25.6	7.30	25.8	7.40	25.8	7.20	25.9	7.20	25.8	7.10	25.8	7.10	25.5
4	7.20	25.5	6.96	25.6	7.30	25.8	7.40	25.8	6.90	25.8	7.00	25.7	7.10	25.5	7.00	25.5
5	7.10	25.5	6.99	25.4	7.41	25.8	7.31	25.8	7.00	25.8	7.10	25.5	7.10	25.5	7.02	25.5
6	7.18	25.5	6.99	25.4	7.41	25.8	7.21	25.7	6.85	25.8	7.20	25.4	7.10	25.4	7.12	25.2
7	7.10	25.4	6.95	25.3	7.30	25.8	7.11	25.6	6.82	25.3	7.05	25.2	7.19	25.2	7.10	25.1
8	6.61	25.2	6.70	25.3	7.20	25.5	6.92	25.3	5.40	25.0	7.20	25.2	6.90	25.1	7.00	25.1
[illegible]	6.29	25.1	6.24	25.2	6.41	25.1	6.42	25.1	6.20	24.8	6.60	25.1	6.90	25.0	4.10	24.6
10	3.16	24.3	3.45	24.2	1.86	24.2	3.25	24.2	2.80	24.2	2.95	24.2	2.70	24.0	2.42	23.8
11	0.78	23.7	1.60	23.2	0.19	23.1	1.61	23.3	0.80	22.8	1.50	23.2	1.30	22.8	1.20	22.8
[illegible]	[illegible]	[illegible]	0	21.5	0	21.8	0	22.0	0	21.1	0.20	21.7	0	21.2	0	21.0
[illegible]	0	[illegible]	0	19.9	0	20.1	0	20.0	0	19.8	0	20.0	0	20.0	0	19.2
[illegible]	[illegible]	[illegible]	0	18.7	0	19.8	0	18.9	0	18.5	0	18.6	0	18.8	0	17.9
[illegible]	[illegible]	[illegible]	0	17.7	0	17.8	0	17.8	0	17.5	0	17.7	0	17.7	0	16.9
16	0	16.5	0	16.7	0	17.1	0	16.9	0	16.0	0	16.2	0	16.6	0	16.1
17	0	15.8	0	15.7	0	15.9	0	15.8	0	15.2	0	15.2	0	15.5	0	15.2
18	0	14.7	0	14.6	0	14.7	0	14.8	0	14.2	0	14.6	0	14.4	0	14.2
19	0	13.5	0	13.4	0	13.5	0	13.7	0	13.5	0	13.8	0	13.2	0	13.5
20	0	12.8	0	12.8	0	12.7	0	12.9	0	12.6	0	12.9	0	12.5	0	12.8
21	0	11.9	0	11.9	0	11.9	0	12.1	0	12.0	0	11.9	0	11.9	0	12.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	0	11.3	0	11.2	0	11.3	0	11.5	0	11.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	10.9	0	10.8	0	10.8	0	10.8	0	10.9
24	0	10.4	0	10.3	0	10.3	0	10.5	0	10.5	0	10.4	0	10.3	0	10.7
25	0	10.1	0	10.0	0	10.0	0	10.0	0	10.0	0	9.9	0	10.0	0	10.1
26	0.53	9.8	0.84	9.8	0	9.8	0	9.8	0	9.8	0	9.8	0	9.8	0	9.8
27	1.36	9.4	1.24	9.4	0	9.3	0	9.4	0	9.5	0.10	9.4	0	9.4	1.50	9.7
28	1.91	9.2	1.51	9.2	0	9.2	1.70	9.2	0	9.2	0.70	9.2	0	9.1	1.80	9.2
29	2.31	9.0	1.71	9.0	0	9.0	2.36	9.0	0.20	9.0	2.30	9.2	0	9.0	2.22	9.1
30	2.66	8.9	1.86	8.9	0	8.9	2.64	8.9	0.40	9.0	2.30	9.0	0	9.1	2.60	9.0
31	2.94	8.8	2.10	8.8	0	8.8	2.81	8.8	0.78	8.9	2.90	8.8	2.75	8.8	2.60	8.8
32	2.80	8.7	2.35	8.7	0	8.7	2.69	8.7	1.30	8.9	2.60	8.8	2.75	8.8	2.60	8.8
33	2.45	8.5	2.27	8.5	0	8.5	3.03	8.5	2.50	8.8	2.60	8.8	1.95	8.8	2.80	8.5
34	2.20	8.4	1.45	8.4	0	8.4	2.21	8.4	1.42	8.6	0.89	8.7	1.60	8.5	2.09	8.5

*See key page 13

APPENDIX B-30

(Continued)

Station 6

	0918		1236		1529		1840		2058		0020		0305		0641	
	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.10	30.0	5.92	29.0	6.35	30.5	6.45	30.5	6.20	31.0	6.79	32.9	6.41	31.0	6.50	32.0
2	6.23	28.0	6.00	27.5	6.55	30.5	6.35	30.0	6.33	31.5	6.75	30.5	6.35	31.0	6.45	31.0
4	6.35	28.0	6.03	27.5	6.50	30.0	6.32	30.0	6.23	31.5	6.75	30.0	6.53	31.5	6.30	30.5
6	6.40	28.0	6.05	27.5	6.50	30.5	6.60	30.5	6.00	29.0	6.81	30.5	6.45	31.5	6.15	31.2
8	6.20	27.5	5.95	28.5	6.40	30.5	6.59	30.5	6.10	31.0	6.55	30.0	6.25	31.0	6.48	30.2
10	5.65	26.0	5.95	26.8	6.50	30.0	6.35	27.0	6.00	28.5	6.60	29.0	6.35	29.0	6.35	28.8
16	5.79	31.5	5.70	31.0	6.00	33.0	6.10	33.0	6.10	33.5	6.21	33.0	6.42	30.0	6.25	30.8
22	5.77	35.0	5.35	35.5	6.00	37.5	6.00	36.0	6.25	33.0	6.00	32.5	6.30	36.0	6.15	36.0
28	5.60	30.0	5.20	30.2	6.00	32.0	5.83	30.5	5.85	28.5	6.56	31.5	6.20	29.0	6.20	30.2
34	5.83	30.0	5.32	29.0	6.02	31.5	5.83	31.5	5.60	31.8	6.20	31.0	5.90	28.5	6.30	30.2

	pH	COND
Surface	6.20	32.5
Above Thermo (9 meters)	6.60	31.5
Below Thermo (13 meters)	6.35	28.0
Bottom (34 meters)	5.60	31.5

	0918	1236	1529	1840	2058	0020	0305	0641	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	3.0	1.5	2.5	2.0	6.0	3.5	1.0	4.0	2.5	1.5	1.5	3.5
Residue Filt.	32.0	21.0	19.0	7.5	19.5	29.0	29.0	28.0	30.0	20.5	12.5	42.0
Nitrate/Nitrite	0.060	0.070	0.070	0.060	0.050	0.050	0.050	0.050	<0.010	0.010	0.010	0.210
Ammonia	0.110	0.090	0.110	0.100	0.140	0.130	0.120	0.070 / 0.070	0.070	0.070	0.050	0.210 / 0.050
TKN	0.760	0.760	0.350	0.320	1.430	0.300	0.220	0.360	0.220	0.130	0.300	0.130
Phosphate Total	0.025	0.020	0.020	0.020 / 0.020	1.570 / 0.025	0.020	0.025	0.025	0.020	0.020	0.025	0.020
Alkalinity (pH 4.5)	4.4	4.8	5.2	4.7	5.2	5.2	5.7	4.4	4.2	4.6	3.7	4.2
Free CO_2	8.5	8.5	5.5	4.6	8.5	4.9 / 2.6	5.5	6.0	4.2 / 5.0	2.2	2.3	10.0
TOC	1.78	4.82 / 5.03 / 5.30	2.70	1.93	4.03	2.50	2.50	2.04	2.31 / 2.25	1.91	1.72	1.53
BOD	-	-	-	-	-	-	-	-	-	-	-	<1
COD	-	-	-	-	-	-	-	-	-	-	-	2.2

*See key page 13

August Diel Study
8-1/2-81

Station [illegible] [illegible]-81

	[illegible]		1235		1506		[illegible]		2050		*0105		0300		[illegible]	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	[illegible]	[illegible]	7.27	26.3	7.27	26.3	7.31	26.3	7.31	26.1	7.00	26.0	6.80	26.0	6.50	25.8
1	[illegible]	25.6	7.27	26.4	7.22	26.3	7.30	26.3	7.30	26.1	7.00	26.0	6.62	26.0	6.25	25.9
2	7.09	26.7	7.15	26.4	7.22	26.3	7.25	26.3	7.25	26.1	6.80	26.0	6.50	26.0	6.10	25.9
3	[illegible]	26.7	7.18	26.5	7.20	26.3	7.25	26.3	7.20	26.1	7.00	26.0	6.50	26.0	6.30	25.9
4	[illegible]	26.7	7.09	26.5	7.20	26.3	7.22	[illegible]	7.18	26.2	6.95	26.0	6.58	25.9	6.22	25.9
5	[illegible]	26.7	7.15	26.5	7.18	26.3	7.21	26.3	7.18	26.2	6.70	26.0	6.50	26.0	6.42	25.9
6	[illegible]	25.7	6.91	26.5	7.15	26.3	7.20	26.3	7.10	26.2	6.80	26.0	6.60	26.0	6.60	25.9
7	[illegible]	25.7	6.70	26.5	7.10	26.3	6.89	26.3	7.00	26.2	6.71	26.0	6.50	26.0	6.30	25.8
8	[illegible]	25.8	1.94	25.3	2.37	25.8	2.28	25.7	2.20	25.6	6.20	26.0	2.80	25.5	6.30	25.8
9	[illegible]	[illegible]	1.06	24.9	1.33	24.9	1.15	24.8	1.55	25.1	0.80	24.9	0.88	24.8	0.40	24.8
10	[illegible]	[illegible]	0.13	24.2	0.17	24.2	0.15	24.1	0.25	24.0	0.20	24.0	0.00	24.0	0.00	24.8
11	0.14	[illegible]	0.12	23.5	0.12	23.5	0.13	23.4	0.20	23.1	0.20	23.2	0.00	23.2	0.00	23.2
12	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	0.30	22.2	0.20	22.3	0.00	22.2	0.00	22.5

Titrated DO 7.05
Meter Read 6.80
* Heavy Rain

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	6.50	27.2	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.55	[illegible]	[illegible]	[illegible]	[illegible]	27.2	6.41	26.1	6.53	27.2	6.55	27.5
4	5.92	26.5	6.70	28.0	6.62	28.9	6.61	28.0	6.52	27.2	6.39	25.9	6.49	27.0	6.55	27.5
6	[illegible]	26.5	6.60	28.0	6.60	28.1	6.50	28.5	6.50	26.9	6.45	26.0	6.50	27.5	6.53	27.8
8	[illegible]	[illegible]	5.75	25.6	5.90	26.0	5.92	26.4	5.95	25.2	5.70	24.5	6.22	27.5	6.05	26.0
10	[illegible]	27.0	6.05	31.0	6.85	27.0	5.90	28.2	5.68	27.0	5.65	26.1	5.90	27.0	5.89	27.2
[illegible]	5.30	38.9	6.20	41.0	6.00	37.0	6.01	36.4	5.95	38.9	5.99	26.0	6.10	38.5	6.00	37.0

	pH	COND
Surface	6.50	[illegible]
Above Thermo (7 meters)	6.50	29.0
Below Thermo (9 meters)	5.92	26.0
[illegible] (12 meters)	6.00	38.0

*See key page 13

APPENDIX B-31

(Continued)

Station 7

	0918	1236	1529	1840	2050	0020	0305	0641	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	7.0	3.0	3.5	1.0	10.0	1.5	3.0	6.5	1.0	2.0	6.5	60.5
Residue Filt.	26.5	20.0	22.5	28.5	21.0	29.5	29.5	22.0	25.0	30.0	22.0	39.0
Nitrate/Nitrite	0.070	0.030	0.020	0.005	0.030	0.030	0.080	0.070	0.020	0.040	0.040	0.060 0.070
Ammonia	0.100	0.070	0.070	0.050	0.100	0.080	0.070	0.120	0.060	0.060 0.070	0.070	0.320
TKN	0.500	0.440	0.370	0.400	0.840 0.640	0.500	0.370	0.810	0.870	0.500	0.220	0.820
Phosphate Total	0.050	0.040	0.020	0.025 0.032	0.032	0.025	0.032	0.065	0.020	0.020	0.020 0.020	0.180
Alkalinity (pH 4.5)	5.4	4.7	4.3 4.4	4.4	5.2	4.1	4.2	4.2	4.7	4.0	3.5	9.6 9.6
Free CO_2	9.5	3.5	4.0	4.5	6.0	7.0	4.0	3.8	2.6	2.4	6.0	18.0
TOC	1.98	2.07	2.29	1.91	2.84	2.22	1.96	3.21 3.31	2.06	3.28 3.34	1.68	4.60
BOD	-	-	-	-	-	-	-	-	-	-	-	1
COD	-	-	-	-	-	-	-	-	-	-	-	13.2

*See key page 13

August Diel Study
8-5/6-81

Station 8

	0915		1210		1508		1820		2057		0017		0325		0631	
DEPTH	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP	DO	TEMP
SS	4.91	25.4	6.09	26.1	6.33	26.5	6.84	26.6	7.30	26.6	7.20	26.3	6.75	26.2	6.70	25.8
1	4.62	25.3	5.69	25.6	6.22	26.5	6.69	26.4	6.98	26.3	7.02	26.2	6.50	26.2	6.60	25.8
2	4.68	25.3	5.00	25.2	5.51	25.8	5.95	26.0	6.40	26.1	6.80	26.2	6.50	26.2	6.60	25.8
3	4.45	25.2	4.79	25.2	4.76	25.1	5.38	25.7	6.12	26.0	6.20	26.1	6.50	26.2	6.59	25.8
4	4.52	25.2	4.80	25.1	4.61	25.0	4.61	25.0	4.51	25.1	4.80	25.3	4.60	26.0	4.70	25.3
5	4.13	25.1	4.44	25.0	4.35	25.0	4.16	24.9	3.50	24.8	4.05	25.0	3.60	25.1	3.90	24.9
6	2.24	24.8	2.56	24.8	3.50	24.7	3.20	24.8	1.75	24.7	3.00	24.8	2.75	24.8	2.49	24.8
7	1.25	24.2	1.93	23.8	0.66	24.0	2.25	24.5	0.41	24.2	1.50	24.4	1.00	24.5	0.90	24.2
8	0	23.7	0.05	23.3	0.05	23.5	0.06	23.8	0.10	23.8	0.10	23.5	0	24.0	0	23.5
9	0	23.8	0.04	22.7	0.03	22.9	0.04	23.0	0.10	23.0	0.10	23.1	0	23.2	0	22.9

DEPTH	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND	pH	COND
SS	6.50	43.0	6.80	45.9	6.75	44.0	7.00	41.4	6.50	41.5	6.10	43.3	6.70	41.1	6.70	41.9
2	6.51	36.0	6.50	43.5	6.69	43.0	6.82	43.0	6.79	41.1	6.70	41.0	6.71	40.0	6.62	40.4
4	6.55	35.9	6.70	42.5	6.50	42.1	6.80	44.0	6.81	43.0	-	-	6.52	43.5	6.69	43.0
6	6.39	34.6	6.60	41.0	6.50	44.0	6.72	43.0	6.72	44.1	6.72	43.9	6.41	44.0	6.63	44.0
8	6.40	39.3	6.75	43.2	6.63	45.0	6.65	43.5	6.79	47.0	6.09	47.0	6.60	47.0	6.35	48.0

	pH	COND
Surface	6.50	40.0
Above Thermo (5 meters)	6.80	43.0
Below Thermo (7 meters)	7.20	47.0
Bottom (9 meters)	6.80	47.0

	0915	1210	1508	1820	2057	0017	0325	0631	Surf	Above Therm	Below Therm	Bottom
Residue Non Filt.	4.0	<1.0	<1.0	2.5	3.5	6.5	33.0	29.5	1.0	3.0	9.5	22.5
Residue Filt.	22.5	35.0	30.0	21.5	30.0	22.0	32.5	43.0	32.0	22.5	21.0	22.0
Nitrate/Nitrite	0.030	0.030	0.040	0.040	0.020	0.030	0.030	0.040	0.010	0.030	<0.010	0.030
Ammonia	0.100	0.100	0.130	0.080	0.180	0.030 0.130	0.200	0.130	0.090	0.110	0.140	0.290
TKN	0.330	0.780	0.810	0.560	0.580	0.610	0.620	1.050	0.410	0.430	0.420	0.790
Phosphate Total	0.015	0.011	0.028	0.008	0.011	0.015	0.070	0.050	<0.005	0.008	0.015	0.040 0.068
Alkalinity (pH 4.5)	8.6	7.4	8.6	7.4	9.1	9.1	8.6	4.4	6.4	7.4	6.4	10.6
Free CO_2	5.0	3.4	3.8	8.1 2.3	2.7	3.6	5.0	2.1	3.4	2.2	0.8	10.4 1.1
TOC	2.27	2.50	3.50	2.16	4.21	2.39	5.27	4.25	3.58	2.11	2.46	3.05
BOD	-	-	-	-	-	-	5.30 -	-	3.47 -	-	-	1
COD	-	-	-	-	-	-	-	-	-	-	-	9.2

*See key page 13

APPENDIX B-33

8-8-81

August Sampling of River Stations

	9 NG	10 G	10 NG	11 G	11 NG	12 G	12 NG
Residue Non Filt	16.0	15.0	25.0	18.0	31.0	30.5	30.5
Residue Filt	2.0	1.0	2.5	2.0	1.5	2.0	<1.0
Nitrate/Nitrite	0.03 0.03	0.02	0.02	0.23	0.22	0.21	0.17
Ammonia	0.07	0.07 0.09	0.06	0.11	0.09	0.12	0.07
TKN	0.49	0.17	0.17	0.27	0.47	0.25	0.31
Phosphate Total	0.050	0.036	0.033	0.047	0.018	0.036	0.027 0.022
Alkalinity (pH 4.5)	3.2	2.2	2.2	4.3 3.7	3.7	4.0	2.8
Free CO_2	5.0	3.6	3.5	9.5	8.0	-	-
TOC	3.54 3.58	1.81	2.04	1.93	1.85	1.94 1.94	1.93
BOD	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
COD	6.4	3.6	4.0	2.4	4.4	3.6	4.4
DO	8.40	7.49	7.25	8.60	7.45	8.40	9.72
pH	5.90	5.92	5.80	6.00	5.42	6.30	5.70
Cond	28.0	17.6	17.6	30.7	26.2	36.0	26.0
Temp	30.3	25.5	25.5	11.3	12.0	11.5	15.2

*See key page 13

APPENDIX B-34

Residue, Total Non-Filtrable (mg/l)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	2	3	3	< 1	5	3
2	1	1	< 1	4	4	4
3	6	6	3	3	5	8
4	8	1			5	4
5	2	1			5	5
6	3	2	5	3	5	106
7	9	13	8	21	7	25
8	6	13	13	8	3	4
9	< 1	1	2	1	2	3
10	1	1	2	7	1	1
11	1	1	4	2	< 1	1
12	3	1	2	1	1	1

Aug. 1981

Lake Stations STATION #	A*	B*	River Stations STATION #	VALUE
1	< 1	3	9 NG*	16
2	3	1	10 G*	15
3	3	1	10 NG	25
4	2	1	11 G	18
5*	3	1	11 NG	31
6	2	2	12 G	31
7	2	7	12 NG	31
8	3	10		

*See key page 13

APPENDIX B-35

Residue, Total Filtrable (mg/l)

	Feb. 1981		Jun. 1981		Nov. 1981	
STATION #	1*	2*	1*	2*	1*	2*
1	64	79	58	54	34	20
2	34	39	38	36	22	22
3	23	36	53	47	27	33
4	24	39	22	26	19	38
5	41	40	21	22	20	38
6	41	37	69	36	23	13
7	66	90	39	36	21	14
8	84	79	47	42	38	28
9	39	44	28	18	25	23
10	15	34	38	25	25	23
11	21	23	25	23	21	18
12	27	31	27	30	37	40

Aug. 1981

Lake Stations

STATION #	A*	B*
1	31	16
2	30	28
3	29	34
4	32	26
5*	24	21
6	21	13
7	30	22
8	23	21

River Stations

STATION #	VALUE
9 NG*	2
10 G*	1
10 NG	3
11 G	2
11 NG	2
12 G	2
12 NG	< 1

*See key page 13

Turbidity (JTU)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	< 5	< 5	< 5	< 5	< 5	[illegible]
2	< 5	< 5	< 5	< 5	10	5
3	< 5	< 5	< 5	< 5	5	10
4	< 5	< 5	< 5	< 5	10	10
5	< 5	< 5	< 5	< 5	5	5
6	< 5	< 5	< 5	< 5	20	20
7	< 5	< 5	< 5	< 5	10	20
8	5	5	< 5	< 5	5	5
9	< 5	< 5	< 5	< 5	< 5	< 5
10	< 5	< 5	< 5	< 5	< 5	5
11	5	5	< 5	< 5	< 5	< 5
12	5	5	< 5	< 5	< 5	< 5

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	SAMPLES
11 NG	
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-37

Nitrite and Nitrate (mg N/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	.17	.17	.13	.14	.05	.05
2	.14	.17	.14	.01	.03	.03
3	.19	.17	.15	.14	.15	.10
4	.13	.15	.21	.21	.09	.09
5	.10	.13	(.05) .05	.07	(.08) .09	.23 (.21)
6	(.13) .13	.13	.13	.11	.07	.04
7	.03	.05	.02	.02	.05	.07 (.08)
8	.18	.18	.01	.05 (.05)	.05	.05 (.05)
9	.06	.08	.02	.02 (.02)	.08	.08
10	.05	.04	.02	.02 (.02)	.05	.04
11	.10	.09	(.10) .10	.10	.10	.10
12	(.46) .48	.44	.22	.22	.43	.42 (.42)

Aug. 1981

Lake Stations

STATION #	A*	B*
1	< .01	.08
2	.04	.16 (.17)
3	.03	.05
4	.02	.70
5*	(.03) .03	.05
6	.01	.01
7	.04	.04
8	.03	< .01

River Stations

STATION #	VALUE
9 NG*	.03 (.03)
10 G*	.02
10 NG	.02
11 G	.23
11 NG	.22
12 G	.21
12 NG	.17

*See key page 13

APPENDIX B-38

Ammonia (mg N/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	< .01	.10	.03	< .01	.24	.07
2	.01	< .01	.09	< .01	.10	< .01
3	.03	.04	< .01	.01	.04	.04 (.05)
4	< .01	.03	.09	.05	.08	.03
5	(.03) .03	.03	< .01	< .01	.02	< .01
6	.03	.06	< .01	< .01	< .01	.09
7	.03	.01	.05	.05 (.06)	< .01	< .01
8	< .01	.03	.09	.10	.01	< .01
9	.03	.01	< .01	< .01	< .01	.02
10	.01	.01	(.07) .05	.03	< .01	< .01
11	< .01	< .01	.05	.05	< .01	< .01
12	.03	.03	.04	.05	(.08) .07	.06

Aug. 1981

Lake Stations

STATION #	A*	B*
1	.05	.09
2	.07	.07 (.17)
3	.10	.14
4	.10	.04
5*	(.06) .06	.11
6	.07	.05
7	(.07) .06	.07
8	.11	.14

River Stations

STATION #	VALUE
9 NG*	.07
10 G*	.07 (.08)
10 NG	.06
11 G	.11
11 NG	.09
12 G	.12
12 NG	.07

*See key page 13

APPENDIX B-39

TKN (mg N/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	0.03	0.38	0.29	0.65	0.41	0.24
2	0.08	0.50	(0.22) 0.25	0.25	0.31	0.33
3	*C	0.50	0.20		0.38	0.40 (0.38)
4	0.42	0.08	0.42	0.32	0.43	0.46
5	(0.42) 0.42	0.13	0.40	0.27	0.50	0.45
6	0.30	0.33	0.17	0.18	(0.37) 0.42	0.72
7	0.17	0.10		0.69	0.26	0.26
8	0.20	0.18	0.47	1.34 (1.24)	0.42	0.49
9	0.17	0.33	(0.07) 0.07	0.23 (0.25)	0.28	0.38
10	0.07	0.08	0.30	0.10	0.10	0.08
11	0.25	0.04	0.33	0.38	0.11	0.13
12	0.25	0.17	0.37		0.33	0.33

Aug. 1981

Lake Stations

STATION #	A*	B*
1	.41	.54
2	.20	.28 (.33)
3	.22	.29
4	.32	.39
5*	.32	.35
6	.13	.30
7	.50	.22
8	.43	.42

River Stations

STATION #	VALUE
9 NG*	0.49
10 G*	0.17
10 NG	0.17
11 G	0.27
11 NG	0.47
12 G	0.25
12 NG	0.31

*See key page 13

*C = contaminated

APPENDIX B-40

Phosphate Total (mg P/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	.01	.01	.02	.02	< .01	< .01 (< .01)
2	.01	.01	.02	.02	.03	< .01
3	(.01) .01	.01	.03	.02	.03	.03
4	.02	.02	.02	.03	.05	.03
5	.02	.02	.03	.03	.04	.04
6	(.02) .02	.02	(.02) .02	.02	< .01	.12
7	.01	< .01	.03	.03	.05	.05 (.04)
8	.03	.02	.03	.03	.05	.05 (.05)
9	.03	.02	.02	.02	.02	.02
10	.01	.01	.02	.02	.02	.02
11	.01	.01	(.04) .04	.04	.02	.02
12	.07	.07	.07	.08	.08	.08 (.08)

Aug. 1981

Lake Stations

STATION #	A*	B*
1	.05	.03
2	.02	
3	.05	.02
4	.01	.01
5*	(.03) .03	.06
6	.02	.03
7	.02	.02 (.02)
8	.01	.02

River Stations

STATION #	VALUE
9 NG*	.05
10 G*	.04
10 NG	.03
11 G	.05
11 NG	.02
12 G	.04
12 NG	.03 (.02)

*See key page 13

Orthophosphate (mg P/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	.01	.01	< .01	< .01	< .01	< .01 (.01)
2	.01	.01	.01	< .01	.03	< .01
3	(.01) .01	.01	< .01	< .01	< .01	< .01
4	.01	.01	< .01	< .01	< .01	< .01
5	.02	.01	< .01	< .01	< .01	.01
6	(.02) .02	.02	(<.01)< .01	< .01	< .01	.01
7	< .01	< .01	.01	< .01	.03	.03
8	.02	.02	.01	.01	(.17) .17	.01 (.01)
9	(.02) .02	.02	< .01	< .01	< .01	< .01
10	.01	.01	.02	.01	< .01	< .01
11	.01	.01	.01	.01	< .01	< .01
12	(.07) .07	.07	.02	.02	.04	.04

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	
11 NG	SAMPLES
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-42

Alkalinity (pH 4.5) (mg/l as $CaCO_3$)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	6.4	6.4	6.2	5.7	9.2	8.7 (8.7)
2	8.0	7.7	3.7	3.7	10.4	10.2
3	9.3	9.0	4.4	4.9 (4.9)	9.5	9.7
4	9.0	9.3	3.7	3.7	8.7	9.2
5	(5.8) 5.8	9.0 (9.0)	4.9	4.9	7.3	6.8
6	8.3	8.6	3.7	4.0 (3.7)	9.5	28.9 (31.8)
7	8.3	7.7	4.9	4.4	7.8	7.3
8	10.9	11.2	6.9	6.9	11.4	10.7 (10.7)
9	7.7	7.7	3.7	3.5	6.8	6.6
10	7.0	7.0	(2.0) 2.0	2.2	6.1	5.1
11	7.7	7.7	4.4	4.2	10.0	9.7
12	9.0	9.0	5.2	5.4	10.4	10.0 (10.2)

Aug. 1981

Lake Stations

STATION #	A*	B*
1	4.4	4.7
2	4.2	4.2
3	5.7	6.3
4	6.4	6.2
5*	5.9	5.4
6	4.6	3.7
7	4.0	3.5
8	7.4	6.4

River Stations

STATION #	VALUE
9 NG*	3.2
10 G*	2.2
10 NG	2.2
11 G	4.3 (3.7)
11 NG	3.7
12 G	4.0
12 NG	2.8

*See key page 13

APPENDIX B-43

Free CO_2 (mg/l as CO_2)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	6.4	6.5	7.5	6.5	10.0	11.0
2	3.4	3.6	4.7	5.0	5.0	4.0
3	4.5	4.2	6.5	6.5	22.0	20.0
4	5.6	6.0	5.0	5.0	11.0	19.0
5	5.8	9.0	6.5	6.5	17.0	10.0
6	3.6	3.8		5.5	21.0	45.0
7	6.3	6.1	6.0	5.5	3.2	4.5
8	6.9	7.3	8.5	8.5	7.0	10.0
9	2.8	3.4	3.4	3.5	15.0	15.0
10	5.0	6.0	1.9	2.3	13.0	6.0
11	4.0	4.8	5.0	6.0	20.0	20.0
12	4.6	4.0	6.0	8.0	15.0	15.0

Aug. 1981

Lake Stations

STATION #	A*	B*
1	4.9	9.5
2	7.5	8.5
3	3.7	7.0
4	11.5	
5*	5.9	5.4
6	2.2	2.3
7	2.4	6.0
8	2.2	0.8

River Stations

STATION #	VALUE
9 NG*	5.0
10 G*	3.6
10 NG	3.5
11 G	9.5
11 NG	8.0
12 G	
12 NG	

*See key page 13

APPENDIX B-44

Color (Platinum - Cobalt units)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	0	2	< 2	< 2	2	2
2	5	2	< 2	< 2	10	10
3	2	5	< 2	< 2	5	10
4	5	3	< 2	< 2	10	10
5	2	2	< 2	< 2	5	5
6	3	3	< 2	< 2	15	15
7	3	2	< 2	< 2	10	15
8	5	5	3	< 2	10	10
9	5	2	< 2	< 2	< 2	< 2
10	5	3	5	< 2	3	2
11	5	5	< 2	< 2	2	2
12	5	5	< 2	< 2	3	3

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	
11 G	NO
11 NG	SAMPLES
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-45

Total Organic Carbon (mg C/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*		Nov. 1981 1*	Nov. 1981 2*	
1	1.64	1.64	2.24	2.31	(2.43)*	1.59	1.54	
2	1.70	1.75	2.14	1.65		3.02	2.40	(2.37)
3	1.83	1.80	2.27	2.04		2.24	2.20	
4	1.71	1.72	2.01	1.93		3.05	2.34	
5	1.84	1.87	2.73	2.24	(2.29)	2.32	3.15	
6	1.60	1.56	1.70	1.71		1.94	1.90	
7	1.55	1.53	1.93	2.04		2.11	1.86	
8	2.00	2.00	2.66	3.41		2.08	2.09	(1.95)
9	1.37	1.80	1.38	1.61		0.92	1.72	
10	1.36	1.27	1.89	2.25		1.99	1.67	
11	1.50	1.48	1.82	1.66		1.35	2.72	
12	1.85	1.85	1.91	1.80		2.29	2.39	

Aug. 1981

Lake Stations

STATION #		A*	B*	
1		2.39	2.41	
2		1.90	1.86	
3	(2.57)	2.47	2.35	
4		2.03	1.87	(1.89)
5*		4.47	4.60	(4.47)
6		1.91	1.72	
7	(3.34)	3.28	1.68	
8		2.11	2.46	

River Stations

STATION #	VALUE	
9 NG*	3.54	(3.58)
10 G*	1.81	
10 NG	2.04	
11 G	1.93	
11 NG	1.85	
12 G	1.94	(1.94)
12 NG	1.93	

*See key page 13

APPENDIX B-46

Iron, Total (μg Fe/l)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	90	70	30	40	400	190
2	30	< 10	70	270 (310)	640	670
3	110	90	190	320 (310)	220	310
4	100	160	(180) 190	120	510	180
5	(310) 240	150	180	190	90	130
6	160	110	(70) 70	100	680	1,000
7	160	170	640	580	140	1,040 (1,170)
8	240	240	770	340	240	290 (310)
9	150	100	70	90	100	100
10	50	90 (90)	260	230	230	220
11	< 10	< 10	110	90	290	470
12	260	260	140	140 (130)	300	480

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	SAMPLES
11 NG	
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-47

Iron, II (μg Fe/1)

STATION#	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	< 10	< 10	< 10	< 10	< 10	< 10
2	< 10	< 10	< 10	< 10	600	600
3	< 10	< 10	< 10	< 10	20	20
4	< 10	< 10	< 10	< 10	20	20
5	< 10	< 10	< 10	< 10	20	20
6	< 10	< 10	< 10	< 10	300	700
7	< 10	< 10	< 10	< 10	50	50
8	< 10	< 10	< 10	< 10	50	40
9	< 10	< 10	< 10	< 10	20	20
10	< 10	< 10	< 10	< 10	100	100
11	< 10	< 10	< 10	< 10	100	50
12	< 10	< 10	< 10	< 10	150	150

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4		
5*	SAMPLES	
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

APPENDIX B-48

Manganese, Total (μg Mn/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	10	10	10	10	240	170
2	10	10	10	30	280	270
3	10	10	30	40	60	70
4	20	10	60	60	40	40
5	20	20 (20)	70	70	20	30
6	10	10	20	10	270	280
7	40	50	300	270	30	100 (90)
8	30	20	240	170	30	20 (20)
9	20	20	30	30	60	70
10	20	20 (20)	20	20	20	20
11	10	10	20	30	350	350
12	30	40	10	10	70	80

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	SAMPLES
11 NG	
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-49

Manganese, Dissolved (μg Mn/l)

STATION#	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	< 10	< 10			260	190
2	< 10	< 10			280	270
3	< 10	< 10			60	80
4	< 10	< 10	NO		50	40
5	< 10	< 10	SAMPLES		30	30
6	< 10	< 10			300	310
7	< 10	< 10	TAKEN		30	110
8	< 10	< 10			30	20
9	< 10	< 10			70	70
10	< 10	< 10			10	20
11	< 10	< 10			380	370
12	< 10	< 10			90	90

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	
11 NG	SAMPLES
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-50

Sulfide, Dissolved (mg S/1)

STATION#	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	< .02	< .02			< .02	< .02
2	< .02	.08			< .02	< .02
3	.02	.02			< .02	< .02
4	< .02	.02	NO		.08	.08
5	< .02	.02			< .02	< .02
6	< .02	< .02	SAMPLES		< .02	< .02
7	< .02	.02	TAKEN		.14	.14
8	.02	< .02			< .02	< .02
9					.07	.07
10					< .02	< .02
11					< .02	.07
12					< .02	< .02

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4		
5*	SAMPLES	
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	
11 NG	SAMPLES
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-51

Sulfate, Total (mg SO_4/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	1.1	1.0			1.5	1.0 (0.8)
2	1.0	1.0			1.2	1.8
3	1.5	1.5			1.0	2.0
4	0.8	0.5			1.0	1.0
5	1.0	1.0	NO		1.5	1.8
6	1.8	1.6	SAMPLES		2.0	2.2
7	1.9	1.5			1.0	2.5 (2.2)
8	2.2	2.8	TAKEN		1.0	1.0 (1.2)
9	0.8	0.9			0.5	0.2
10	0.9	1.0			1.2	1.5
11	1.0	0.1			1.2	1.0
12	2.4	3.0			3.0	3.0

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6		
7	TAKEN	
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	
11 G	NO
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

APPENDIX B-52

Calcium, Total (mg Ca/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	1.61	1.26			1.25	1.14
2	2.41	4.68			1.49	1.31
3	1.41	1.58			1.23	1.14
4	1.68	1.33	NO		2.04	1.23
5	(1.38) 1.41	1.33			1.03	1.07
6	1.43	1.36	SAMPLES		1.05	1.09 (0.70)
7	0.88	1.01	TAKEN		2.01	1.02
8	1.66	1.53			2.53	2.84
9	1.73	1.21			1.06	1.08
10	0.78	0.71 (0.71)			0.83	0.84
11	0.81	1.53			1.37	1.32
12	1.18	1.11			1.43	1.48 (1.48)

Aug. 1981

Lake Stations STATION #	A*	B*	River Stations STATION #	VALUE
1			9 NG*	
2			10 G*	
3	NO		10 NG	NO
4			11 G	
5*	SAMPLES		11 NG	SAMPLES
6	TAKEN		12 G	TAKEN
7			12 NG	
8				

*See key page 13

APPENDIX B-53

Magnesium, Total (mg Mg/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	0.59	0.69			1.01	0.93
2	0.90	0.88			1.11	1.05
3	0.80	0.78			0.95	0.93
4	0.74	0.87			1.08	0.96
5	(0.62) 0.74	0.71	NO		0.71	0.77
6	0.75	0.68	SAMPLES		0.90	0.92
7	0.66	0.65			0.95	0.98
8	1.25	1.05	TAKEN		1.52	1.55 (1.30)
9	0.64	0.65			0.61	0.67
10	0.46	0.48 (0.54)			0.53	0.56
11	0.64	0.73			1.05	1.05
12	0.87	0.81			1.25	1.32 (1.35)

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6		
7	TAKEN	
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	
11 G	NO
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

AD-A163 557 1981 HARTWELL LAKE WATER QUALITY STUDY APPENDIX(U) ARMY 2/3
ENGINEER DISTRICT SAVANNAH GA SEP 82 DACW21-81-C-0008

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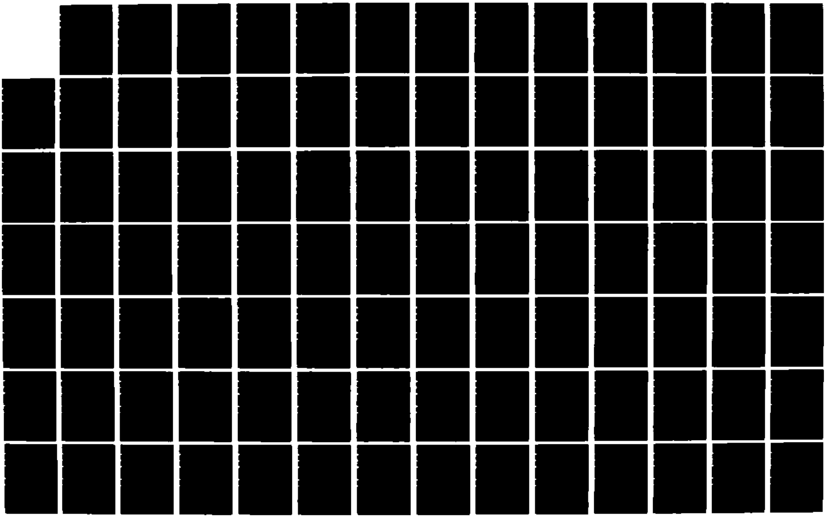

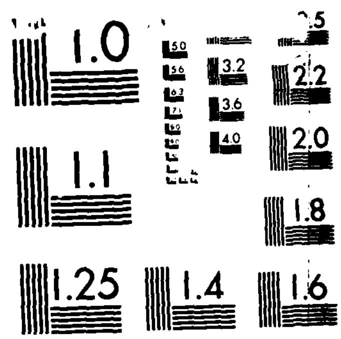

MICROCOPY RESOLUTION TEST CHART
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APPENDIX B-54

Hardness (calc.) (mg $CaCO_3/l$)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	6.5	6.0			7.3	6.7
2	9.5	15.3			8.3	7.5
3	6.8	7.0			7.0	6.7
4	7.2	6.9			9.5	7.0
5	6.2	6.2	NO		5.5	5.8
6	6.7	6.2	SAMPLES		6.3	6.5
7	4.9	5.2			8.9	6.6
8	9.2	8.1	TAKEN		12.6	13.5
9	6.9	5.7			5.1	5.5
10	3.9	3.8 (4.0)			4.3	4.4
11	4.7	6.4			7.7	7.6
12	6.5	6.1			8.7	9.1

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6		
7	TAKEN	
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	
11 G	NO
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

APPENDIX B-55

Sodium, Total (mg Na/l)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	2.19	2.20			4.97	4.71
2	4.54	4.00			5.08	6.09
3	4.97	4.74			5.89	5.61
4	4.19	4.74	NO		5.59	5.46
5	(2.79) 4.24	3.77	SAMPLES		4.44	4.67
6	3.49	3.17			4.43	4.65
7	2.39	2.37	TAKEN		4.61	4.44
8	3.79	3.37			5.14	5.51 (5.53)
9	2.18	2.12			2.71	2.88
10	1.32	1.42 (1.55)			2.26	2.37
11	2.07	2.14			4.99	4.60
12	4.89	3.94			10.09	11.18

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6		
7	TAKEN	
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

APPENDIX B-56

Potassium, Total (mg K/1)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	1.04	1.00			1.98	1.74
2	1.35	1.30			1.89	1.73
3	1.29	1.24			2.08	1.78
4	1.19	1.16			1.70	1.76
5	(0.96) 1.10	1.12	NO		1.54	1.62
6	1.18	1.10	SAMPLES		1.52	1.55
7	0.85	0.79			1.36	1.44 (1.54)
8	1.34	1.27	TAKEN		1.94	1.92 (2.08)
9	0.82	0.81			1.21	1.25
10	0.63	0.62 (0.61)			1.21	1.22
11	0.98	1.09			1.61	1.48
12	1.37	1.34			2.56	2.60 (2.58)

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3		
4	NO	
5*	SAMPLES	
6		
7	TAKEN	
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	
11 G	NO
11 NG	SAMPLES
12 G	
12 NG	TAKEN

*See key page 13

APPENDIX B-57

Chloride (mg Cl/l)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	1.0	1.5			2.2	2.1
2	1.9	1.7			1.8	1.8
3	0.9	1.2			2.0	2.0
4	2.5	3.0	NO		1.9	2.0
5	2.0	2.0	SAMPLES		1.9	4.1
6	(1.1) 1.0	2.0			1.4	1.5
7	0.5	0.7			1.9	1.8
8	1.3	1.4			3.4	2.2
9	0.4	0.6			1.5	0.9
10	0.1	< 0.1 (< 0.1)			0.7	0.8
11	0.6	0.9			1.9	2.5
12	2.2	2.2			8.0	8.0

Aug. 1981

Lake Stations

STATION #	A*	B*
1		
2		
3	NO	
4	SAMPLES	
5*		
6	TAKEN	
7		
8		

River Stations

STATION #	VALUE
9 NG*	
10 G*	
10 NG	NO
11 G	SAMPLES
11 NG	
12 G	TAKEN
12 NG	

*See key page 13

APPENDIX B-58

BOD_5 (mg/1)
(measured at bottom)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	2	2	1	1	2	3
2	< 1	< 1	2	2	2	2
3	2	3	1	1	3	4
4	1	1	1	2	< 1	< 1
5	1	1	3	2	2	2
6	2	2	1	1	3	2
7	< 1	< 1	< 1	1	< 1	2
8	2	1	2	2	2	2
9	< 1	< 1	1	1	< 1	< 1
10	< 1	< 1	1	1	1	< 1
11	< 1	< 1	1	1	< 1	1
12	1	1	2	2	1	< 1

Aug. 1981

Lake Stations

STATION #	1	2
1	< 1	< 1
2	< 1	< 1
3	1	2
4	2	2
5	< 1	< 1
6	< 1	< 1
7	1	< 1
8	1	< 1

River Stations

STATION #	VALUE
9 NG*	< 1
10 G*	< 1
10 NG	< 1
11 G	< 1
11 NG	< 1
12 G	< 1
12 NG	< 1

*See key page 13

APPENDIX B-59

COD (mg/l)

STATION #	Feb. 1981 1*	Feb. 1981 2*	Jun. 1981 1*	Jun. 1981 2*	Nov. 1981 1*	Nov. 1981 2*
1	1.1	1.1	3.3	1.8	5.6	4.1
2	0.3	1.0	2.0	3.0	4.9	5.0
3	5.6	4.2	4.3	5.0	7.5	7.8
4	4.6	5.3	7.3	6.1	4.8	5.8
5	(6.7) 7.7	9.1	6.9	5.8	4.1	4.1
6	5.0	10.8	4.0	2.9	5.3	5.3
7	5.0	2.0	(10.4) 9.8	7.9	4.4	6.0
8	10.4	8.4	(8.6) 8.9	8.2	6.2	5.9
9	1.3	0.4	0.0	2.7	0.0	0.6
10	(0.3) 0.3	0.3	2.7	5.1	0.0	0.0
11	2.4	1.3	2.4	2.4	0.0	0.0
12	3.7	2.3	2.4	2.7	3.8	3.8

Aug. 1981

Lake Stations (Bottom)

STATION #	1
1	6.4
2	9.2
3	10.4
4	13.6
5	5.2
6	2.2
7	13.2
8	(9.2) 9.0

River Stations

STATION #	VALUE
9 NG*	6.4
10 G*	4.0
10 NG	3.6
11 G	2.4
11 NG	4.4
12 G	3.6
12 NG	4.4

*See key page 13

APPENDIX C

PHYTOPLANKTON AND PERIPHYTON

APPENDIX LIST

APPENDIX LIST (cont'd)

APPENDIX C-1

February Phytoplankton (cells/liter x10^4)

Taxa — station/date	1	1A **	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	2/12		2/8		2/12		2/7		2/7		2/8		2/5		2/7	
CYANOPHYTA																
*Anabaena sp. 3					26.3	31.5										
Anacystis montana										1.75						
Coelosphaerium sp. 1	0.35															
*Oscillatoria sp. 1		0.35	1.41							1.75			10.5	17.5		
CHLOROPHYTA																
Ankistrodesmus falcatus	2.80	2.45	4.22	3.86	7.89	14.9	15.8	12.3	35.0	85.9	11.1	29.8	33.3	24.5	6.91	7.42
A. falcatus v. acicularis	24.9	18.6	12.30	11.2	35.0	28.9	54.3	52.5	49.0	61.4					76.0	59.4
Arthrodesmus incus													1.75			
Carteria sp.									1.75							
Chodatella longiseta										1.75						
C. quadriseta					1.75	5.25	12.3	1.75	33.3	52.6				3.50		
Cosmarium sp.									1.75							
Crucigenia tetrapedia			0.35		1.75	2.62	1.75	3.50	1.75							
Dictyosphaeria erenbergianum									15.8	8.77		0.58	33.3	24.5		
Elakatothrix gelatinosa												1.17				
Eudorina sp.							1.75									
Golenkinia radiata									35.0				3.51	1.75		
Lauterborniella elegantissima									1.75							
Micractinium pusillum					7.01											
*Mougeotia sp.						2.62										
Pediastrum duplex v. gracilium										1.75						
P. tetras			1.41	1.40	3.50											
P. tetras v. tetraodon								1.75								
P. tetras v. evoluta		0.35							1.75							
*Planktonema lauterbornii							8.76	35.0	22.8							
Scenedesmus armatus		0.70	1.41	2.8	3.50	0.88	5.26	1.75	1.75	7.02	0.58					
S. bijuga		1.40	2.11		8.76	1.75	1.75	3.50	10.5	3.51	0.58	0.58				14.8
S. hystrix															6.91	
S. intermedius									1.75							
S. quadricauda							3.50	1.75			0.58					
S. sp.													1.75	1.75		
Tetraedron minimum				0.70												
T. trigonum v. setigerum			0.35							1.75						
CRYPTOPHYTA																
Cryptomonas ovata					5.26		8.76	1.75	15.8	14.0		0.58		3.50	27.7	7.42

APPENDIX C-1

February Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	2/12		2/8		2/12		2/7		2/7		2/8		2/5		2/7	
CHRYSOPHYTA																
Chrysochromulina sp.							3.50	3.50								
Dinobryon acuminatum																
D. cylindricum													3.51	3.50	6.91	
D. pediforme						0.88										
D. sertularia									1.75							
Mallomonas caudata							1.75			3.51						
Ochromonas sp.	7.36	1.40														
Pseudotetradon neglectum										3.51						
BACILLARIOPHYTA																
Achnanthes microcephala		3.15				4.37		1.75			0.58		3.51			
A. sp.																
Asterionella gracillima					3.5		14.0	43.8	43.8	45.6	0.58		1.75			
Cyclotella stelligera	1.75	1.05	2.11	1.75	5.26	0.88		8.76	5.26	1.75	1.17	0.58	102.0	98.0		14.8
Cymbella sp.																
Fragilaria construens	0.35	1.4														
F. construens v. *pumila*	0.70															
F. crotonensis					0.88	3.50	3.50	1.75			4.09	4.09				7.42
F. sp.																7.42
Frustrulia viridula			0.35													
Gomphonema parvulum	1.40		2.46	3.15	1.75			1.75	5.26	1.75	2.92	0.58	1.75	1.75		7.42
* *Melosira granulata*	2.10						38.5	7.00	22.8	7.02						
* *M. granulata* v. *angustissima*	1.75	1.05	3.17	2.45	7.89	5.25				1.75	3.50	5.84	17.5	8.75		
M. italica v. *alpigena*	15.8	13.0	14.4	22.4	42.1	23.6	38.5	45.5	22.8	28.1	17.5	22.2	224.0	231.0	6.91	29.7
M. sp.																
Navicula exigua																
N. notha																
N. sp.	0.35			0.70												
Nitzschia acicularis	8.76	9.46	12.3	11.2	16.6	14.9	31.5	17.5	61.3	42.1	1.75	2.33	5.26		55.3	126.0
N. palea	0.35	0.70							15.8	10.5	4.09	0.58		3.50	6.91	7.42
Pinnularia sp.						0.88					1.17					
Rhizosolenia longiseta	1.40	1.40	1.76	0.70	1.75	2.62						0.58		1.75		
Synedra delicatissima						3.50	5.26	7.00						3.50		
S. filiformis		7.01	5.63	7.01	17.5	14.0	26.3	26.3	24.5	29.8	3.50	4.67	14.0	14.0	34.6	29.7
Tabellaria fenestrata	9.46	9.11	9.14	4.21	18.4	7.87	56.1	21.0	33.3	3.51	22.2	8.76	1.75			

APPENDIX C-1

February Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	2/12		2/8		2/12		2/7		2/7		2/8		2/5		2/7	
PYRROPHYTA																
Gymnodinium sp.	0.35			0.35												
Peridinium aciculiferum	0.35				26.3	18.4	19.3	33.3	28.0	40.3	1.17	1.75	3.51	3.51	41.5	51.9
EUGLENOPHYTA																
Trachelomonas superba					0.88		1.75		1.75							
FLAGELLATES AND MONADS			27.1	22.1	38.6	39.4	114.0	52.5	275.0	284.0	57.2	58.4	77.1	77.1	2530	2650
MISCELLANEOUS ZYGOTES					3.50	1.75	1.75									
TOTAL CELLS PER LITER																

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C-2

April Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	4/4		4/4		4/5		4/5		4/5		4/4		4/4		4/5	
CYANOPHYTA																
*Anabaena sp. 3						23.8										
Anacystis montana	12.8	6.98	21.9	7.87		2.63	35.0	1.75	3.83			35.1	8.76	8.76		
*Oscillatoria sp. 1									7.65							
CHLOROPHYTA																
Ankistrodesmus falcatus	2.67	4.30	7.01	7.87	7.01	16.7	12.3	31.5	24.9	47.9	3.54	7.01	29.8	24.5	49.0	31.5
A. falcatus v. acicularis	6.95	11.3	17.5	7.00	8.76	13.2	19.3	12.3	13.4	39.9	19.3	38.6	7.01		31.5	28.0
Chodatella quadriseta			8.76	0.88	12.3	14.1	19.3	12.3	48.5	87.8	1.75				7.01	3.50
Closteriopsis longissima			8.76		1.75							1.75				
Crucigenia quadriseta	0.54	1.07		0.88	3.50		1.75				1.75	35.1				
Dictyostelium ehrenbergianum								8.76	1.92	16.0					21.0	10.5
Elakatothrix gelatinosa									3.83		1.75		3.50			
Golenkinia radiata								1.75	6.38				1.75	3.50		
Oocystis elliptica					5.26	1.76		5.25	2.55	7.98	3.54	7.01			10.5	3.5
Pediastrum tetras f. evoluta				0.88	1.75	1.76		3.50						3.50		
* Planktonema lauterbornii					14.0			50.8	105							
Scenedesmus armatus						1.75										
S. bijuga	1.07	0.54	1.75	0.88	8.76	12.3	12.3	24.5	10.9	16.0	3.54	3.51	3.51		14.0	28.0
S. quadricauda																3.50
S. sp. 1				0.88												
S. sp. 2										7.98						
Tetraedron minimum									3.83							
CRYPTOPHYTA																
Cryptomonas ovata	15.0	8.05		5.25		2.64	5.25	3.50	10.2					8.76	35.0	56.0
C. sp. 1	7.48	9.12	3.51	7.00	35.0	40.4	35.0	38.5	52.9	120	52.6	94.7	14.0	43.8	49.0	63.0
CHRYSOPHYTA																
Dinobryon bavaricum	2.67	4.83	5.26	1.75	1.75			3.50								
D. cylindricum				0.88							3.54					
D. sertularia			4.38	2.62		4.39			1.92		3.54	17.5	5.26	14.0		
Ochramonas sp. 1	11.8	17.7	38.6	30.6	70.1	92.9	73.5	77.0	44.7	104	54.3	49.1	40.3	66.6	77.1	98.0

APPENDIX C-2

April Phytoplankton (cells/liter x10^4)

Taxa — station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	4/4		4/4		4/5		4/5		4/5		4/4		4/4		4/5	
BACILLARIOPHYTA																
Achnanthes microcephala	3.21					0.88									3.50	3.50
Asterionella formosa								1.75					28.0			
Cyclotella stelligera	1.07					4.39	1.75	3.50	4.46		3.54	1.75	1.75	8.76		3.50
Gomphonema parvulum	2.14															
* *Melosira granulata*								8.76								
* *M. granulata v. angustissima*		3.22					10.5							12.3		17.5
M. italica v. alpigena	20.9	20.4	14.9	23.6	35.0	33.4	42.0	38.5	43.1	16.0	56.1	26.3	42.0	22.8	21.0	35.0
Navicula cryptocephala																3.50
N. sp.			0.88	0.88												
Nitzschia acicularis	3.21	5.37	0.88	4.37	10.5	14.1	15.8	22.8	34.4	16.0	1.75	1.75	14.0	8.76	105	140
N. palea		0.54														
N. sp.													3.50	1.75		
Pinnularia biceps							1.75									
Rhizosolenia longiseta	6.42	2.68	3.51	4.37	10.5	5.26	7.00	1.75			3.54	1.75	10.5	5.26	7.0	7.00
Synedra delicatissima							1.75						1.75			
S. filiformis	0.54	1.61			3.50	0.88		3.50						5.26	105	189
S. sp.							3.50									
Tabellaria fenestrata	4.81			9.62	17.5	26.3	28.0	38.5	5.75		3.54	75.4				
PYRROPHYTA																
Gymnodinium sp.	1.07	1.07	9.64	9.62	12.3	10.5	29.8	15.8	10.2			5.26			7.01	3.50
Peridinium aciculiferum	12.3	8.59	5.26	12.2	45.6	62.3	50.8	52.5	94.9	120	64.8	36.8	17.5	19.3	161	91.0
P. sp.			87.6													
EUGLENOPHYTA																
Euglena intermedia																3.50
Phacus brevicauda			12.3				3.50	10.5								
Trachelomonas sp.						1.76			3.83							
FLAGELLATES AND MONADS	64.6	116	159	138	566	569	702	800	1181		354	442	547	583	1320	1810
CYSTS AND ZYGOTES		1.61	1.75	0.88	5.26			7.0							38.5	28.0
TOTAL CELLS PER LITER X 10^4	185	225	312	279	876	958	1080	1280	2320	3510	636	817	776	841	2070	2660

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C- 3

June Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	6/6		6/6		6/7		6/7		6/6		6/6		6/5		6/7	
CYANOPHYTA																
*Anabaena circinalis													21.4	176		
*A. sp. 1			30.9	18.0	20.6	10.3		22.3								
*A. sp. 2									8.50	16.9		3.40				
Anacystis incerta				2.57		1.71				3.38						
A. montana	1.71	3.99	0.86	3.42		3.42										
Aphanocapsa sp. 1										54.1						
Aphanothece sp. 1					1.71											
Gloeocapsa sp. 1					54.8							6.83				
*Oscillatoria geminata					0.10											
Dactylococcopsis musicola									4.25				2.57	3.43		
CHLOROPHYTA																
Ankistrodesmus convolutus									8.50							
A. falcatus	1.71	0.57					3.42	3.43	4.25	3.38					26.5	26.1
A. falcatus v. acicularis		1.71					1.71		21.2	6.76	0.86		6.85	5.14		
A. falcatus v. mirabilis					1.71											
A. nannoselene					87.4	73.6	161	216	582	382	2.67	0.85	0.86	17.1	431	444
Arthrodesmus convergens																6.53
A. incus								1.71								
A. incus v. extensus													0.86			
Botryococcus sudeticus												0.85	2.57			15.2
Chodatella quadriseta			0.86	0.86			1.71	3.43		3.38						
C. tetrapedia																
Closteriopsis longissima					3.43	3.42	3.42	1.71	4.25	10.1			0.86		6.63	
Cosmarium sp.			1.71			1.71										
Dictyosphaerium planktonicum						1.71		1.71			0.86	0.85	3.43			
Dysmorphococcus variabilis														3.43		
Franceia ovalis														1.71		
Gloeocystis botryoides														13.7		6.53
Golenkinia radiata								3.43	4.25			0.85				
Gonium sociale	0.57	0.57														
Kirchneriella obesa															6.63	
K. subsolitaria										3.38						
Merptrichia capitata																
Oocystis sp.											0.86					
Pandorina morum														1.71		
Pediastrum tetras f. evoluta						3.42			4.25							

APPENDIX C-3

June Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
			6/6		6/7		6/7		6/6		6/6		6/5		6/7	
* *Planktoniella lauterbornii*			5.14	3.42				17.1						25.7		
Scenedesmus bijuga				0.86		1.71	3.42		4.25	6.76		0.85	0.86			6.53
S. dispar																
S. quadricauda	0.57				1.71		1.71	1.71	8.50	3.38				1.71		39.2
S. serratus					1.71											
Selenastrum minutum													4.28	51.4		6.53
Staurastrum aspinosum v. *annulatum*							1.71									
S. chaetoceros	0.57							1.71								
S. paradoxum									4.25							
S. protectum v. *planktonicum*													0.86			
Staurastrum sp. 1	0.57															
Tetraedron sp. 1			0.86	4.28	8.57		3.42	6.85	25.5	10.1		1.71	0.86	3.43	13.3	
CRYPTOPHYTA																
Cryptomonas marsonii	2.28															
C. ovata			4.29	1.71	5.14	10.3	12.0	6.85	17.0	6.76	3.43	3.42	8.57	1.71	99.5	65.3
C. sp. 2	4.57	9.13	16.3	10.3	15.4	12.0	8.56	8.56		6.76	12.0	10.3	2.57	3.43	126	91.4
CHRYSOPHYTA																
Dinobryon sertularia		0.57														
D. sociale			0.56													
Ochramonas sp. 1	9.14	13.1	11.1	11.1	6.85	13.7	32.5	12.0	42.5	33.8	2.67	0.85			46.4	58.9
Rhizochrysis limnetica	1.14	2.28	3143	2.57		3.42	1.71	1.71					1.71		6.63	
BACILLARIOPHYTA																
Achnanthes microcephala				1.71	3.43	6.85		1.71	4.25							
Asterionella formosa							3.42	1.71								
A. gracillima											6.86		4.28			
Attheya zachariasi										3.38			1.71	6.85		
Cyclotella stelligera	1.71		1.71		1.71	1.71	18.8	13.7	25.5	3.38		0.85	3.43	1.71	6.63	19.6
Gomphonema sp. 1							1.71									
* *Melosira granulata* v. *angustissima*						17.1	8.56		34.0		6.00		34.3	20.6		
M. italica v. *alpigena*	2.86	4.56	3.43	8.56	6.85	3.42				13.6	12.0	5.13	24.0	25.7	19.8	
Micractinium pusillum v. *elegans*																
Nitzschia acicularis	2.28	1.14		2.57	10.3	12.0	18.8	20.6	34.0	10.1			3.43			13.1
N. palea							1.71						0.86			
Rhizosolenia eriensis	1.71	1.14	10.3	6.85	3.43	1.71	3.42	3.43	12.7	10.1	1.71	0.26	0.86	3.43		
R. longiseta														1.71		
Synedra delicatissima			0.86		1.71											
S. filiformis		2.85	2.57	1.71	10.3	17.1	3.42	20.6		3.38						
S. rumpens v. *scotia*								24.0	25.7	25.5	20.3			3.43		65.3
S. sp. 2				0.86												
Tabellaria fenestrata	5.71				12.0	24.0	13.7	10.3		10.1	4.29	3.42	3.43			
T. floculosa																

APPENDIX C-3

June Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	6/6		6/6		6/7		6/7		6/6		6/6		6/5		6/7	
PYRRHOPHYTA																
Ceratium hirundinella													0.86			
Gymnodinium sp.	4.57	5.70	5.14	5.14	5.14	6.85	1.71	1.71					1.71	3.43	39.8	19.6
Peridinium aciculiferum	1.71		0.86					1.71				0.85	1.71			6.53
P. wisconsinense																
P. sp.	1.71	0.57														
EUGLENOPHYTA																
Phacus brevicauda									4.25	6.76						
P. sp. 1													0.86			
P. sp. 2				2.57		51.3	10.3	5.14			1.71					
Trachelomonas sp.			0.86	1.71												
FLAGELLATES AND MONADS	162	173	229	205	490	397	406	452	556	524	219	166	266	303	1180	1170
CYSTS AND ZYGOTES	1.71	1.71					5.13	3.43		3.38	1.71	1.71	3.43	1.71		
	0.57	0.57	1.71			1.71					5.34					
TOTAL CELLS PER LITER X 10^4	209	223	330	297	764	635	755.0	870	1440	1170	282	211	412	639	2010	2010

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C-4

August Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	8/6		8/7		7/30		8/4		8/5		8/2		8/1		8/3	
CYANOPHYTA																
* Anabaena confervoides	18.0	12.8	24.0	[illegible]	22.3	37.0	27.3	51.8	41.2		10.2	15.4	147	81.9	13.7	
Anacystis incerta		3.42	37.6	25.7	24.0	47.9	147	95.0	217	102	18.8	9.43	116	99	229	137
A. montana	12.0	12.0	13.7	20.5	94.2	82.1	27.3	30.2	27.5	3.41	40.2	38.6	61.5	44.4	6.84	6.85
Dactylococcopsis musicola	5.99	5.13	22.2	24.0	8.57	13.7	3.41	4.32			5.12	11.1	10.3		3.42	
* Lyngbya subtilis	1.71	2.57		5.99			211	229	268	225	10.3	13.7	281	386	58.1	68.5
CHLOROPHYTA																
Actinastrum hantzschii v. fluviatile						1.71	13.6	69.1	34.4	20.5	0.86		54.8	37.5	23.9	44.5
Ankistrodesmus falcatus							20.5	30.2	20.5	23.9			10.3	20.5	54.7	37.7
A. falcatus v. acicularis					12.0	13.7							3.43		6.84	3.42
A. falcatus v. mirabilis													3.43			
A. falcatus v. tumida											0.86				3.42	
A. nannoselene		10.3	5.99	9.41			17.0		3.44						23.9	24.0
Asterococcus spinosus									6.88							
Characium limneticum													3.43			
Chlorella sp.	0.86															
Closteriopsis longissima	0.86				1.71	1.71			3.44	341				10.2		
Coelastrum sphaericum																3.42
Cosmarium isthmium										6.82						
C. sp. 1			2.57			3.42		4.32	13.7	10.2	0.86		3.43			3.42
C. sp. 2									3.44							13.7
Dictyosphaerium pulchellum				0.86			3.41		6.88			0.86		3.41	6.84	
Eudorina elegans							6.82									
Gloeocystis planktonicum																3.42
Golenkinia radiata								4.32	13.7	3.41	1.71	0.86		6.83	6.84	6.85
Kirchneriella lunaris						5.13		13.0				1.76		10.2		
Micractinium pusillum						1.71		17.3	6.88	3.41			3.43			
Oocystis elliptica	0.86		0.86													
O. sp.									6.88							
Pandorina morum							3.41									
Pediastrum duplex v. gracillimum							3.41									6.85
P. tetras v. tetraedon										3.41						
* Planktoniella lauterbornii							17.0	4.32								
Quadrigula chodati			2.57								3.42					

APPENDIX C-4

August Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	8/6		8/7		7/30		8/4		8/5		8/2		8/1		8/3	
Quadrigula closteriodes	0.86		17.1	19.7	13.7	8.56	20.5	8.64	6.88	3.41			3.43	6.83		3.42
Scenedesmus bijuga	2.57	2.57														
S. longus	0.86															
S. quadricauda		0.86						4.32		6.82					27.3	24.0
Schroederia setigerum	0.86				3.42											
Selenastrum westii		0.86														
Sphaerocystis schroeteri															3.42	
Staurastrum chaetoceros					0.86	1.71	3.41		6.88	13.7			3.43	6.83	1.71	10.3
S. clevei									3.44	3.41						
S. dejectum									3.44							
S. furcigerum							3.41									
S. hirsutum												0.86				
S. mansfeldtii															3.42	
S. mansfeldtii v. fluminense									10.2	6.82						
S. sp.						1.71										
Tetraedron arthrodesmiforme			0.86													
T. caudatum	1.71											0.86				
T. minutum									3.44							
T. tetragonium			0.86													
T. sp.	2.57	2.57			1.71	1.71		8.64			0.86	3.43	6.85		3.43	
Treubaria setigerum																6.85
CRYPTOPHYTA																
Cryptomonas ovata			0.86	1.71	17.1			8.64	10.3	3.41	3.42	1.71			6.84	
C. sp. 1	7.70	12.8	8.55	2.57	10.3	15.4				10.2		1.71				
C. sp. 2		3.42				13.7			3.44			0.86	6.85	20.5	10.3	24.0
CHRYSOPHYTA																
Dinobryon bavaricum							3.41									
Mallomonas caudata	0.86															
M. producta															6.84	
M. tonsurata											2.56	0.86				
M. sp.						1.71			3.44							
Ophiocytium parvulum					3.42	1.71	10.2	17.3	27.5	17.1			6.85		6.84	30.8
BACILLARIOPHYTA																
Achnanthes microcephala	0.86															
Asterionella formosa v. gracillima					8.57		17.0	8.64	6.88	6.82						
Attheya zachariasi																3.42
Cyclotella stelligera	1.71	2.57	1.71	0.86					6.88	6.82	0.86			3.41		3.42
Fragilaria construens													6.85			

APPENDIX C-4

August Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	8/6		8/7		7/30		8/4		8/5		8/2		8/1		8/3	
* *Melosira ambigua*	57.3		11.1													
* *M. granulata* v. *angustissima*	19.7	4.28						104.0				2.57				
M. italica v. *alpigena*	12.8	0.86	12.0	15.4	34.2	17.1	10.2	4.32	10.3	13.6	30.8	13.7	10.3	13.7		
Navicula exigua													3.43			
Nitzschia acicularis			1.71		10.3	5.13	20.5		17.2	10.2	1.71	0.86	27.4	23.9	13.7	34.2
N. palea			0.86			3.42							3.43		3.42	
N. sp.					171											
Rhizosolenia longiseta		0.86	4.28	3.42	5.14	6.84	17.0	17.3	17.2	6.82	0.86	2.57		6.83	3.42	6.85
Synedra delicatissima						1.71		4.32	3.44							
S. filiformis	2.57		0.86		17.1	6.84	30.7	47.5	13.7	3.41	1.71	1.72	3.43	10.2	61.5	17.1
S. rumpens v. *scotia*			2.57	1.71				4.32		6.82	0.86	1.73	3.43	10.2		
Tabellaria fenestrata	3.42	2.57	4.28		8.57							4.27				
PYRROPHYTA																
Ceratium hirundinella	0.86															
Gymnodinium sp.					15.4	8.56	3.41	4.32	3.44	10.2	3.42	0.86		6.83	6.84	6.85
Peridinium aciculiferum					3.42				6.88	6.82						6.85
P. wisconsinense				0.86	1.71							1.72				6.85
P. sp.						3.42	3.41	8.64		3.41		0.86				6.85
EUGLENOPHYTA																
Euglena acus													3.43			
E. elastica															3.42	
E. polymorpha													3.43			
Trachelmonas sp. 1	0.86												3.43			
T. sp. 2							3.41								10.3	6.85
FLAGELLATES AND MONADS	251	278	239.0	212.0	438.0	614.0	416.0	492.0	498.0	600.0	131.0	.132	359.0	485.0	448.0	380.0
CYSTS AND ZYGOTES					1.71			4.32	3.44	10.2				3.41		
TOTAL CELLS PER LITER x10^4	403	366	416	362	764	960	1060	1300	1330	1160	283	271	1150	1290	1080	938

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C-5

November Phytoplankton (cells/liter x10^4)

Taxa / station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	11/1		11/1		11/1		11/1		11/1		11/1		11/1		10/30	
CYANOPHYTA																
Agmenellum quadraduplicatum							1.71	10.3	54.8	44.5	0.86		17.1	24.0	6.84	13.7
* Anabaena confervoides		26.2														
* A. variabilis			6.86			9.42			24.0				72.0			
Anacystis incerta	3.43	6.84	9.71	6.85	6.84	4.28	13.7	8.56	89.1	48.0	12.8	7.71	68.6	99.4	85.5	92.3
A. montana	20.6	20.5	18.3	7.99	19.7	9.42	17.1	15.4	30.8	24.0	15.4	9.42	51.4	24.0	37.6	34.2
Dactylococcopsis musicola	0.57			1.14										3.43		
* Oscillatoria geminata									41.1	37.7						
CHLOROPHYTA																
Actinastrum hantzschii v. fluviatile			1.14								0.86	0.86	3.43			
Ankistrodesmus falcatus			0.57	1.14	6.84	2.57	6.84	15.4	257	144			20.6	41.1	17.1	27.3
A. falcatus v. acicularis		0.57		0.57	2.56	1.71		6.84	10.3	13.7	7.70	3.43	13.7	13.7	27.3	13.7
A. falcatus v. tumidus	0.57											1.71				
Chodatella longiseta										3.43			3.43			
C. subsalsa																
Closteriopsis longissima											0.86					
Crucigenia crucifera													6.86			
C. tetrapedia								1.71	3.43	6.85						
* Dictyosphaerium planktonicum			0.57			0.86										
Francea ovalis			0.57								0.86			10.3	6.84	3.42
Golenkinia radiata									65.1	17.1		1.71	10.3	17.1	13.7	23.9
G. radiata v. brevispina						2.57										
Kirchneriella elongata											0.86			3.43		
K. subsolitaria					0.86										3.42	3.42
Micractinium pusillum						0.86			3.43	10.3					10.3	10.3
Pediastrum biradiatum					0.86	1.71		1.71		20.6		0.86	3.43			
P. tetras f. evoluta								5.13	10.3		0.86					
P. tetras v. tetraedon																
Quadrigula closterioides		0.57	1.71		0.57		1.71	1.71	13.7			1.71				
Scenedesmus acuminatus						0.86			10.3	3.43						
S. armatus v. bicaudatus					1.71	0.86			24.0	30.8			3.43			
S. bijuga				1.71	8.55		6.84	6.84	27.4	24.0	2.57	3.43		20.6		13.7
S. denticulatus						0.86				3.43						
S. intermedius					0.86											
S. quadricauda					12.0	5.14	12.0	1.71	75.4	71.9	1.71	0.86		10.3	20.5	10.3
S. sp. 3						0.86										

APPENDIX C-5

November Phytoplankton (cells/liter x10^4)

Taxa station/date	1	1A **	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	11/1		11/1		11/1		11/1		11/1		11/1		11/1		10/30	
Selenastrum sp. 1										68.5						
Staurastrum dejectum															3.42	
Tetraedron trigonum								5.13								
T. trigonum v. setigerum				.57	0.86				3.43	24						
CRYPTOPHYTA																
Cryptomonas ovata	2.86	3.99	2.28	0.57	5.98	4.28		8.56	41.1	41.1	0.85	0.86	10.3	6.86	13.7	10.3
C. sp. 1			3.43	3.42	11.1	5.99	44.5	58.2	288	209						
C. sp. 2	0.57		0.57	1.71		7.71	12.0	13.7	20.7	48		2.57	13.7	17.1	10.3	3.42
CHRYSOPHYTA																
Dinobryon bavaricum	1.14	2.28	0.57												54.7	34.2
Mallomonas elliptica					16.2	25.7	59.9	73.6	151	168						
M. majorensis													44.6	27.4	3.42	
BACILLARIOPHYTA													27.4			
Asterionella formosa		2.28	19.4	11.4	9.40	3.43			3.43		19.7	12.8	3.43		17.1	3.42
A. formosa v. gracillima			0.57	0.57			1.71					1.71				3.42
Attheya zachariasi						0.86	1.71			1.71		1.71	6.86	6.86	3.42	
Cyclotella meneghiniana		0.57		0.57	3.42	2.57			3.43	3.43	1.71			3.43		3.42
C. stelligera														13.7		
Fragilaria capucina	9.14	12.5		1.14												
F. crotonensis	20.6	12.0				42.8	8.55		48.0	6.85	6.84	41.1				
* Melosira ambigua		5.13		22.2			51.3	30.8		54.8	4.28	42.0		48.0	10.3	20.5
* M. granulata v. angustissima	6.29	2.28	5.71	3.99	3.42	4.28	6.84	10.3	68.5	34.3	9.41	6.85	3.43	1.37	17.1	3.42
M. italica v. alpigena	1.71	3.42	2.28	2.85	0.86	0.86	6.84	1.71	13.7			1.71	51.4	54.9	6.84	10.3
Nitzschia acicularis																
N. palea							1.71			3.43						
N. sp. 1				0.57												
Pinnularia sp. 2	8.00	8.55	5.14	1.14		0.86		3.42	6.85		3.42	4.28	30.9	34.3	6.84	13.7
Rhizosolenia longiseta								1.71					3.43	10.3		
Synedra delicatissima											1.71	0.86	6.86	6/86	61.5	51.3
S. filiformis													3.43		3.42	6.84
S. rumpens v. scotia	1.71	3.42	0.57			3.43		5.13			0.86	11.1				34.2
Tabellaria fenestrata																

APPENDIX C-5

November Phytoplankton (cells/liter x10^4)

Taxa — station/date	1	1A**	2	2A	3	3A	4	4A	5	5A	6	6A	7	7A	8	8A
	11/1		11/1		11/1		11/1		11/1		11/1		11/1		10/30	
PYRRHOPHYTA																
Gymnodinium sp.	2.29	1.14	0.57	3.42	1.71	5.14	17.1	6.84	30.8	30.8	0.86	0.86	6.86	3.43	3.42	13.7
Peridinium aciculiferum		1.14		1.14	0.86	1.71			30.8	20.6			10.3	6.86	30.8	20.5
P. sp. 4	0.57											0.86				
EUGLENOPHYTA																
Euglena ehrenbergii					0.86	0.86										
E. sp. 1										3.43						
Trachelomonas horrida													3.43			
T. volvicina																3.42
T. sp. 1				1.14					3.43							
FLAGELLATES AND MONADS	121	122	105	88.4	144	133	299	310	1030	774	146	128	699	915	1260	991
CYSTS AND ZYGOTES		0.57		1.14							0.86			3.43	3.42	
TOTAL CELLS PER LITER X 10^4	200	237	184	166	259	286	580	604	2490	1950	242	298	1200	1440	1740	1470

* values reported are length segments of 10 um
** "A" designates a field duplicate

APPENDIX C-6 PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING FEBRUARY IN DEPTH-INTEGRATED PHYTOPLANKTON SAMPLES FROM EIGHT STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	34	34	0.44	0.44
	CHLOROPHYTA	2559	2593	33.36	33.80
	CRYPTOPHYTA	0	2593	0.00	33.80
	CHRYSOPHYTA	473	3066	6.17	39.96
	BACILLARIOPHYTA	4572	7638	59.59	99.56
	PYRRHOPHYTA	34	7672	0.44	100.00
	EUGLENOPHYTA	0	7672	0.00	100.00
	FLAGELLATES-MONA	0	7672	0.00	100.00
	ZYGOTES	0	7672	0.00	100.00
2	CYANOPHYTA	70	70	0.71	0.71
	CHLOROPHYTA	2103	2173	21.26	21.96
	CRYPTOPHYTA	0	2173	0.00	21.96
	CHRYSOPHYTA	0	2173	0.00	21.96
	BACILLARIOPHYTA	5244	7417	53.00	74.96
	PYRRHOPHYTA	17	7434	0.17	75.14
	EUGLENOPHYTA	0	7434	0.00	75.14
	FLAGELLATES-MONA	2460	9894	24.86	100.00
	ZYGOTES	0	9894	0.00	100.00
3	CYANOPHYTA	2890	2890	11.21	11.21
	CHLOROPHYTA	6302	9192	24.44	35.64
	CRYPTOPHYTA	263	9455	1.02	36.66
	CHRYSOPHYTA	44	9499	0.17	36.83
	BACILLARIOPHYTA	9848	19347	38.19	75.02
	PYRRHOPHYTA	2235	21582	8.67	83.69
	EUGLENOPHYTA	44	21626	0.17	83.86
	FLAGELLATES-MONA	3900	25526	15.12	98.98
	ZYGOTES	262	25788	1.02	100.00
4	CYANOPHYTA	0	0	0.00	0.00
	CHLOROPHYTA	10945	10945	25.56	25.56
	CRYPTOPHYTA	525	11470	1.23	26.78
	CHRYSOPHYTA	437	11907	1.02	27.81
	BACILLARIOPHYTA	19787	31694	46.21	74.01
	PYRRHOPHYTA	2630	34324	6.14	80.15
	EUGLENOPHYTA	87	34411	0.20	80.36
	FLAGELLATES-MONA	8325	42736	19.44	99.80
	ZYGOTES	87	42823	0.20	100.00
5	CYANOPHYTA	174	174	0.24	0.24
	CHLOROPHYTA	19532	19706	26.60	26.84
	CRYPTOPHYTA	1490	21196	2.03	28.87
	CHRYSOPHYTA	437	21633	0.60	29.47
	BACILLARIOPHYTA	20333	41966	27.69	57.16
	PYRRHOPHYTA	3415	45381	4.65	61.81
	EUGLENOPHYTA	87	45468	0.12	61.93
	FLAGELLATES-MONA	27950	73418	38.07	100.00
	ZYGOTES	0	73418	0.00	100.00
6	CYANOPHYTA	0	0	0.00	0.00
	CHLOROPHYTA	2248	2248	16.21	16.21
	CRYPTOPHYTA	29	2277	0.21	16.42
	CHRYSOPHYTA	0	2277	0.00	16.42
	BACILLARIOPHYTA	5661	7938	40.83	57.26
	PYRRHOPHYTA	146	8084	1.05	58.31
	EUGLENOPHYTA	0	8084	0.00	58.31
	FLAGELLATES-MONA	5780	13864	41.69	100.00
	ZYGOTES	0	13864	0.00	100.00
7	CYANOPHYTA	1400	1400	2.65	2.65
	CHLOROPHYTA	6480	7880	12.27	14.93
	CRYPTOPHYTA	175	8055	0.33	15.26
	CHRYSOPHYTA	350	8405	0.66	15.92
	BACILLARIOPHYTA	36336	44741	68.82	84.74
	PYRRHOPHYTA	350	45091	0.66	85.41
	EUGLENOPHYTA	0	45091	0.00	85.41
	FLAGELLATES-MONA	7705	52796	14.59	100.00
	ZYGOTES	0	52796	0.00	100.00
8	CYANOPHYTA	0	0	0.00	0.00
	CHLOROPHYTA	8571	8571	2.95	2.95
	CRYPTOPHYTA	1756	10327	0.60	3.56
	CHRYSOPHYTA	345	10672	0.12	3.68
	BACILLARIOPHYTA	15963	26635	5.50	9.17
	PYRRHOPHYTA	4670	31305	1.61	10.78
	EUGLENOPHYTA	0	31305	0.00	10.78
	FLAGELLATES-MONA	259000	290305	89.22	100.00
	ZYGOTES	0	290305	0.00	100.00

STATION	DIVISION		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	|**	989	989	4.83	4.83
	CHLOROPHYTA	|***	1420	2409	6.93	11.76
	CRYPTOPHYTA	|*****	1982	4391	9.67	21.43
	CHRYSOPHYTA	|*****	1850	6241	9.03	30.45
	BACILLARIOPHYTA	|**********	3991	10232	19.47	49.92
	PYRRHOPHYTA	|***	1151	11383	5.62	55.55
	EUGLENOPHYTA	|	0	11383	0.00	55.55
	FLAGELLATES-MONA	|**********************	9030	20413	44.06	99.61
	ZYGOTES	|	80	20493	0.39	100.00
2	CYANOPHYTA	|**	1488	1488	4.30	4.30
	CHLOROPHYTA	|*****	3152	4640	9.11	13.41
	CRYPTOPHYTA	|*	787	5427	2.28	15.69
	CHRYSOPHYTA	|******	4204	9631	12.15	27.84
	BACILLARIOPHYTA	|*****	3150	12781	9.11	36.95
	PYRRHOPHYTA	|*********	6216	18997	17.97	54.92
	EUGLENOPHYTA	|*	615	19612	1.78	56.69
	FLAGELLATES-MONA	|*********************	14850	34462	42.93	99.62
	ZYGOTES	|	131	34593	0.38	100.00
3	CYANOPHYTA	|*	1321	1321	1.44	1.44
	CHLOROPHYTA	|***	6231	7552	6.80	8.24
	CRYPTOPHYTA	|**	3902	11454	4.26	12.50
	CHRYSOPHYTA	|*****	8456	19910	9.23	21.72
	BACILLARIOPHYTA	|****	8110	28020	8.85	30.57
	PYRRHOPHYTA	|****	6535	34555	7.13	37.70
	EUGLENOPHYTA	|	88	34643	0.10	37.80
	FLAGELLATES-MONA	|*******************************	56750	91393	61.92	99.71
	ZYGOTES	|	263	91656	0.29	100.00
4	CYANOPHYTA	|*	1837	1837	1.54	1.54
	CHLOROPHYTA	|*****	10779	12616	9.01	10.55
	CRYPTOPHYTA	|**	4112	16728	3.44	13.99
	CHRYSOPHYTA	|***	7700	24428	6.44	20.43
	BACILLARIOPHYTA	|*****	11553	35981	9.66	30.09
	PYRRHOPHYTA	|***	7445	43426	6.23	36.32
	EUGLENOPHYTA	|	700	44126	0.59	36.90
	FLAGELLATES-MONA	|*******************************	75100	119226	62.81	99.71
	ZYGOTES	|	350	119576	0.29	100.00
5	CYANOPHYTA	|	573	573	0.22	0.22
	CHLOROPHYTA	|****	22232	22805	8.50	8.72
	CRYPTOPHYTA	|**	9155	31960	3.50	12.22
	CHRYSOPHYTA	|*	7531	39491	2.88	15.10
	BACILLARIOPHYTA	|*	5985	45476	2.29	17.39
	PYRRHOPHYTA	|**	11255	56731	4.30	21.70
	EUGLENOPHYTA	|	191	56922	0.07	21.77
	FLAGELLATES-MONA	|***************************************	204550	261472	78.23	100.00
	ZYGOTES	|	0	261472	0.00	100.00
6	CYANOPHYTA	|*	1755	1755	2.31	2.31
	CHLOROPHYTA	|****	6404	8159	8.44	10.76
	CRYPTOPHYTA	|*****	7365	15524	9.71	20.47
	CHRYSOPHYTA	|****	6399	21923	8.44	28.91
	BACILLARIOPHYTA	|******	8770	30693	11.56	40.47
	PYRRHOPHYTA	|****	5343	36036	7.05	47.52
	EUGLENOPHYTA	|	0	36036	0.00	47.52
	FLAGELLATES-MONA	|**************************	39800	75836	52.48	100.00
	ZYGOTES	|	0	75836	0.00	100.00
7	CYANOPHYTA	|*	876	876	1.08	1.08
	CHLOROPHYTA	|**	3677	4553	4.55	5.63
	CRYPTOPHYTA	|**	3328	7681	4.12	9.75
	CHRYSOPHYTA	|****	6308	14189	7.80	17.55
	BACILLARIOPHYTA	|*****	8318	22507	10.29	27.84
	PYRRHOPHYTA	|*	1840	24347	2.28	30.11
	EUGLENOPHYTA	|	0	24347	0.00	30.11
	FLAGELLATES-MONA	|**********************************	56500	80847	69.69	100.00
	ZYGOTES	|	0	80847	0.00	100.00
8	CYANOPHYTA	|	0	0	0.00	0.00
	CHLOROPHYTA	|***	12075	12075	5.11	5.11
	CRYPTOPHYTA	|**	10150	22225	4.30	9.41
	CHRYSOPHYTA	|**	8755	30980	3.71	13.12
	BACILLARIOPHYTA	|*******	32025	63005	13.56	26.68
	PYRRHOPHYTA	|***	13125	76130	5.56	32.24
	EUGLENOPHYTA	|	175	76305	0.07	32.31
	FLAGELLATES-MONA	|*********************************	156500	232805	66.28	98.59
	ZYGOTES	|*	3325	236130	1.41	100.00
		10 20 30 40 50 60 70				
		PERCENTAGE				

APPENDIX C-8. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING JUNE IN DEPTH-COMPOSITED PHYTOPLANKTON SAMPLES FROM EIGHT STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	285	285	1.32	1.32
	CHLOROPHYTA	340	625	1.58	2.90
	CRYPTOPHYTA	799	1424	3.71	6.60
	CHRYSOPHYTA	1311	2735	6.08	12.68
	BACILLARIOPHYTA	1196	3931	5.55	18.23
	PYRRHOPHYTA	712	4643	3.30	21.53
	EUGLENOPHYTA	0	4643	0.00	21.53
	FLAGELLATES-MONA	16750	21393	77.68	99.21
	ZYGOTES	171	21564	0.79	100.00
2	CYANOPHYTA	2787	2787	8.90	8.90
	CHLOROPHYTA	899	3686	2.87	11.77
	CRYPTOPHYTA	1630	5316	5.20	16.97
	CHRYSOPHYTA	1438	6754	4.59	21.56
	BACILLARIOPHYTA	2054	8808	6.56	28.12
	PYRRHOPHYTA	557	9365	1.78	29.90
	EUGLENOPHYTA	256	9621	0.82	30.72
	FLAGELLATES-MONA	21700	31321	69.28	100.00
	ZYGOTES	0	31321	0.00	100.00
3	CYANOPHYTA	4631	4631	6.46	6.46
	CHLOROPHYTA	9501	14132	13.26	19.72
	CRYPTOPHYTA	2142	16274	2.99	22.71
	CHRYSOPHYTA	1198	17472	1.67	24.38
	BACILLARIOPHYTA	6680	24152	9.32	33.70
	PYRRHOPHYTA	599	24751	0.84	34.54
	EUGLENOPHYTA	2565	27316	3.58	38.12
	FLAGELLATES-MONA	44350	71666	61.88	100.00
	ZYGOTES	0	71666	0.00	100.00
4	CYANOPHYTA	1115	1115	1.39	1.39
	CHLOROPHYTA	22011	23126	27.46	28.85
	CRYPTOPHYTA	1798	24924	2.24	31.10
	CHRYSOPHYTA	2396	27320	2.99	34.08
	BACILLARIOPHYTA	8477	35797	10.58	44.66
	PYRRHOPHYTA	256	36053	0.32	44.98
	EUGLENOPHYTA	772	36825	0.96	45.94
	FLAGELLATES-MONA	42900	79725	53.52	99.47
	ZYGOTES	428	80153	0.53	100.00
5	CYANOPHYTA	4356	4356	3.35	3.35
	CHLOROPHYTA	55019	59375	42.25	45.60
	CRYPTOPHYTA	1526	60901	1.17	46.77
	CHRYSOPHYTA	3815	64716	2.93	49.70
	BACILLARIOPHYTA	10784	75500	8.28	57.98
	PYRRHOPHYTA	0	75500	0.00	57.98
	EUGLENOPHYTA	550	76050	0.42	58.40
	FLAGELLATES-MONA	54000	130050	41.47	99.87
	ZYGOTES	169	130219	0.13	100.00
6	CYANOPHYTA	511	511	2.02	2.02
	CHLOROPHYTA	558	1069	2.21	4.23
	CRYPTOPHYTA	1457	2526	5.76	9.99
	CHRYSOPHYTA	176	2702	0.70	10.68
	BACILLARIOPHYTA	3039	5741	12.02	22.70
	PYRRHOPHYTA	42	5783	0.17	22.87
	EUGLENOPHYTA	85	5868	0.34	23.20
	FLAGELLATES-MONA	19250	25118	76.12	99.32
	ZYGOTES	171	25289	0.68	100.00
7	CYANOPHYTA	10170	10170	18.64	18.64
	CHLOROPHYTA	7362	17532	13.49	32.14
	CRYPTOPHYTA	814	18346	1.49	33.63
	CHRYSOPHYTA	85	18431	0.16	33.78
	BACILLARIOPHYTA	6989	25420	12.81	46.60
	PYRRHOPHYTA	385	25805	0.71	47.30
	EUGLENOPHYTA	43	25848	0.08	47.38
	FLAGELLATES-MONA	28450	54298	52.15	99.53
	ZYGOTES	257	54555	0.47	100.00
8	CYANOPHYTA	0	0	0.00	0.00
	CHLOROPHYTA	50971	50971	25.03	25.03
	CRYPTOPHYTA	19110	70081	9.38	34.41
	CHRYSOPHYTA	5596	75677	2.75	37.16
	BACILLARIOPHYTA	7201	82878	3.54	40.69
	PYRRHOPHYTA	3296	86174	1.62	42.31
	EUGLENOPHYTA	0	86174	0.00	42.31
	FLAGELLATES-MONA	117500	203674	57.69	100.00
	ZYGOTES	0	203674	0.00	100.00

10 20 30 40 50 60 70

PERCENTAGE

APPENDIX C-9. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING JULY IN DEPTH-INTEGRATED SAMPLES FROM EIGHT STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	3681	3681	9.59	9.59
	CHLOROPHYTA	1456	5137	3.80	13.39
	CRYPTOPHYTA	1196	6333	3.12	16.51
	CHRYSOPHYTA	43	6376	0.11	16.62
	BACILLARIOPHYTA	5476	11852	14.26	30.87
	PYRRHOPHYTA	43	11895	0.11	30.99
	EUGLENOPHYTA	43	11938	0.11	31.10
	FLAGELLATES-MONA	26450	38388	68.90	100.00
	ZYGOTES	0	38388	0.00	100.00
2	CYANOPHYTA	9535	9535	24.53	24.53
	CHLOROPHYTA	3038	12573	7.81	32.34
	CRYPTOPHYTA	684	13261	1.76	34.10
	CHRYSOPHYTA	0	13261	0.00	34.10
	BACILLARIOPHYTA	3037	16298	7.81	41.91
	PYRRHOPHYTA	43	16341	0.11	42.02
	EUGLENOPHYTA	0	16341	0.00	42.02
	FLAGELLATES-MONA	22550	38891	57.98	100.00
	ZYGOTES	0	38891	0.00	100.00
3	CYANOPHYTA	18486	18486	19.57	19.57
	CHLOROPHYTA	3721	22205	3.94	23.51
	CRYPTOPHYTA	2825	25030	2.99	26.50
	CHRYSOPHYTA	341	25371	0.36	26.86
	BACILLARIOPHYTA	6329	31700	6.70	33.56
	PYRRHOPHYTA	1625	33325	1.72	35.28
	EUGLENOPHYTA	0	33325	0.00	35.28
	FLAGELLATES-MONA	52600	85925	55.67	90.95
	ZYGOTES	8550	94475	9.05	100.00
4	CYANOPHYTA	41316	41316	35.01	35.01
	CHLOROPHYTA	13659	54975	11.57	46.58
	CRYPTOPHYTA	432	55407	0.37	46.95
	CHRYSOPHYTA	1545	56952	1.31	48.26
	BACILLARIOPHYTA	14290	71242	12.11	60.37
	PYRRHOPHYTA	988	72230	0.84	61.21
	EUGLENOPHYTA	170	72400	0.14	61.35
	FLAGELLATES-MONA	45400	117800	38.47	99.82
	ZYGOTES	216	118016	0.18	100.00
5	CYANOPHYTA	44205	44205	35.43	35.43
	CHLOROPHYTA	13174	57379	10.56	45.99
	CRYPTOPHYTA	1367	58746	1.10	47.08
	CHRYSOPHYTA	2402	61148	1.93	49.01
	BACILLARIOPHYTA	6504	67652	5.21	54.22
	PYRRHOPHYTA	1537	69189	1.23	55.45
	EUGLENOPHYTA	0	69189	0.00	55.45
	FLAGELLATES-MONA	54900	124089	44.00	99.45
	ZYGOTES	682	124771	0.55	100.00
6	CYANOPHYTA	8642	8642	31.30	31.30
	CHLOROPHYTA	1968	10610	7.13	38.43
	CRYPTOPHYTA	386	10996	1.40	39.82
	CHRYSOPHYTA	171	11167	0.62	40.44
	BACILLARIOPHYTA	2952	14119	10.69	51.13
	PYRRHOPHYTA	343	14462	1.24	52.38
	EUGLENOPHYTA	0	14462	0.00	52.38
	FLAGELLATES-MONA	13150	27612	47.62	100.00
	ZYGOTES	0	27612	0.00	100.00
7	CYANOPHYTA	61355	61355	50.29	50.29
	CHLOROPHYTA	9396	70751	7.70	57.99
	CRYPTOPHYTA	1367	72118	1.12	59.11
	CHRYSOPHYTA	342	72460	0.28	59.39
	BACILLARIOPHYTA	6322	78782	5.18	64.57
	PYRRHOPHYTA	341	79123	0.28	64.85
	EUGLENOPHYTA	513	79636	0.42	65.27
	FLAGELLATES-MONA	42200	121836	34.59	99.86
	ZYGOTES	170	122006	0.14	100.00
8	CYANOPHYTA	26170	26170	26.02	26.02
	CHLOROPHYTA	18646	44816	18.54	44.55
	CRYPTOPHYTA	2057	46873	2.05	46.60
	CHRYSOPHYTA	2224	49097	2.21	48.81
	BACILLARIOPHYTA	7351	56448	7.31	56.12
	PYRRHOPHYTA	1710	58158	1.70	57.82
	EUGLENOPHYTA	1028	59186	1.02	58.84
	FLAGELLATES-MONA	41400	100586	41.16	100.00
	ZYGOTES	0	100586	0.00	100.00

5 10 15 20 25 30 35 40 45 50 55 60 65

PERCENTAGE

APPENDIX C-10. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING NOVEMBER IN DEPTH-COMPOSITED PHYTOPLANKTON SAMPLES FROM EIGHT STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	3906	3906	17.88	17.88
	CHLOROPHYTA	84	3990	0.38	18.27
	CRYPTOPHYTA	370	4360	1.69	19.96
	CHRYSOPHYTA	171	4531	0.78	20.74
	BACILLARIOPHYTA	4877	9408	22.33	43.07
	PYRRHOPHYTA	256	9664	1.17	44.25
	EUGLENOPHYTA	0	9664	0.00	44.25
	FLAGELLATES-MONA	12150	21814	55.63	99.87
	ZYGOTES	28	21842	0.13	100.00
2	CYANOPHYTA	2542	2542	14.50	14.50
	CHLOROPHYTA	424	2966	2.42	16.91
	CRYPTOPHYTA	598	3564	3.41	20.33
	CHRYSOPHYTA	28	3592	0.16	20.48
	BACILLARIOPHYTA	3903	7495	22.26	42.74
	PYRRHOPHYTA	256	7751	1.46	44.20
	EUGLENOPHYTA	57	7808	0.33	44.53
	FLAGELLATES-MONA	9670	17478	55.15	99.67
	ZYGOTES	57	17535	0.33	100.00
3	CYANOPHYTA	2483	2483	9.11	9.11
	CHLOROPHYTA	2723	5206	9.99	19.09
	CRYPTOPHYTA	1752	6958	6.43	25.52
	CHRYSOPHYTA	2095	9053	7.68	33.20
	BACILLARIOPHYTA	3808	12861	13.97	47.17
	PYRRHOPHYTA	470	13331	1.72	48.89
	EUGLENOPHYTA	86	13417	0.32	49.21
	FLAGELLATES-MONA	13850	27267	50.79	100.00
	ZYGOTES	0	27267	0.00	100.00
4	CYANOPHYTA	3338	3338	5.68	5.68
	CHLOROPHYTA	3676	7014	6.26	11.94
	CRYPTOPHYTA	6848	13862	11.65	23.59
	CHRYSOPHYTA	6675	20537	11.36	34.95
	BACILLARIOPHYTA	6583	27120	11.20	46.15
	PYRRHOPHYTA	1197	28317	2.04	48.19
	EUGLENOPHYTA	0	28317	0.00	48.19
	FLAGELLATES-MONA	30450	58767	51.81	100.00
	ZYGOTES	0	58767	0.00	100.00
5	CYANOPHYTA	19700	19700	8.80	8.80
	CHLOROPHYTA	47289	66989	21.12	29.91
	CRYPTOPHYTA	32395	99384	14.47	44.38
	CHRYSOPHYTA	15950	115334	7.12	51.50
	BACILLARIOPHYTA	12419	127753	5.55	57.05
	PYRRHOPHYTA	5650	133403	2.52	59.57
	EUGLENOPHYTA	342	133745	0.15	59.72
	FLAGELLATES-MONA	90200	223945	40.28	100.00
	ZYGOTES	0	223945	0.00	100.00
6	CYANOPHYTA	2309	2309	8.70	8.70
	CHLOROPHYTA	1540	3849	5.80	14.51
	CRYPTOPHYTA	213	4062	0.80	15.31
	CHRYSOPHYTA	0	4062	0.00	15.31
	BACILLARIOPHYTA	8600	12662	32.41	47.72
	PYRRHOPHYTA	129	12791	0.49	48.21
	EUGLENOPHYTA	0	12791	0.00	48.21
	FLAGELLATES-MONA	13700	26491	51.63	99.84
	ZYGOTES	43	26534	0.16	100.00
7	CYANOPHYTA	17996	17996	13.70	13.70
	CHLOROPHYTA	9083	27079	6.92	20.62
	CRYPTOPHYTA	2398	29477	1.83	22.44
	CHRYSOPHYTA	3600	33077	2.74	25.19
	BACILLARIOPHYTA	15841	48918	12.06	37.25
	PYRRHOPHYTA	1372	50290	1.04	38.29
	EUGLENOPHYTA	171	50461	0.13	38.42
	FLAGELLATES-MONA	80700	131161	61.45	99.87
	ZYGOTES	171	131332	0.13	100.00
8	CYANOPHYTA	13507	13507	8.41	8.41
	CHLOROPHYTA	10431	23938	6.49	14.90
	CRYPTOPHYTA	1886	25824	1.17	16.08
	CHRYSOPHYTA	4616	30440	2.87	18.95
	BACILLARIOPHYTA	13852	44292	8.62	27.58
	PYRRHOPHYTA	3421	47713	2.13	29.71
	EUGLENOPHYTA	171	47884	0.11	29.81
	FLAGELLATES-MONA	112550	160434	70.08	99.89
	ZYGOTES	171	160605	0.11	100.00

10 20 30 40 50 60 70

PERCENTAGE

APPENDIX C-11

February-March Periphyton (cells/mm^2)

Taxa	station 1	1A**	3	3A	5	5A	7	7A	9	9A	12	12A
CYANOPHYTA												
*Anabaena sp. 3			2.79		2.10	0.418					15.0	
Anacystis montana	6.10	5.78	8.83		14.6	7.94	4.59	8.00	20.7	24.3	141.	52.9
Chroococcus limneticus				15.0								
Dactylococcopsis raphidiodes									97.8	43.0	1.88	
*Lyngbya martensiana											113.	132.
*Oscillatoria sp. 1		6.04	26.9	9.81	1.05			0.893		69.4		
Spirulina major											3.75	3.31
CHLOROPHYTA												
Ankistrodesmus falcatus	0.066		1.36	2.80		0.105		.057				
Chodatella quadriseta				.935								
Closteriopsis longissima				.467								
Coleochaete sp. 1						6.90			63.9	86.0		
*Mougeotia sp. 1										59.8		
*Oedogonium sp. 1										22.4		
*Planktonema lauterbornii					1.40							
Scenedesmus armatus					0.110			0.053	1.88			
Stigeoclonium polymorphum											857.	466.
*Ulothrix sp. 1									132	213.		
BACILLARIOPHYTA												
Achnanthes microcephala	8.73	34.9	11.7	13.6	0.233	0.105	0.211	0.105	733	819.	35.6	19.8
A. sp. 1											1.88	
Cyclotella stelligera			0.462	1.87	0.234	0.158	0.158	0.105	5.64		1.88	3.31
Cymbella minuta			0.462	3.27	1.05	0.523	0.105					
C. tumida											1.88	3.31
C. sp. 1				1.40	4.27	0.314	0.053		1.88			
Eunotia pectinalis v. minor											1.88	
E. serra			0.462									
Fragilaria capucina											11.3	6.61
F. crotonensis		0.526										
F. sp. 1									20.7		11.3	
Gomphonema acuminatum		0.657		0.935	0.116	0.105		0.210	13.2	13.1	1.88	
G. augur											3.75	

APPENDIX C-11

February-March Periphyton (cells/mm^2)

Taxa	1	1A	3	3A	5	5A	7	7A	9	9A	12	12A
	atation											
Gomphonema constrictum v. *cuneata*											1.88	
G. gracile											1.88	
G. intricatum									9.40	3.74		
G. parvulum	0.787	2.23	29.9	65.4	2.91	0.418	0.105	0.053	526	374.	71.1	29.8
G. subclavatum											7.50	39.7
G. truncatum									22.6	5.61		
G. sp.1				1.40								
Melosira italica											16.9	
M. italica v. *alpigena*		0.131	16.3	22.9	0.233	0.314	1.48	0.840	13.2			
* *M. granulata*			0.925									
* *M. granulata* v. *angustissima*			0.462	0.935			1.85					
Navicula notha								0.210			26.3	16.5
N. sp. 1				0.935			0.053				9.38	3.31
Nitzschia acicularis		0.131	3.67	19.2	1.17	1.46	0.369	0.105	1.88			9.92
N. palea	0.131	0.920	6.12	7.94	0.233	0.105	0.158	0.263	20.7	5.61	20.6	19.8
Pinnularia sp. 1											5.63	
Stauroneis sp. 1						0.105						
Synedra delicatissima	0.066		3.67	2.80	0.116	0.105			3.76			6.61
S. filiformis	0.459		1.36	13.1	1.51	.941	0.053	0.263	45.2	20.6	11.3	6.61
S. sp. 1			10.7									
Tabellaria fenestrata				4.21	0.815	0.105	0.211	0.053	22.6	20.6	35.6	13.2
PYRRHOPHYTA												
Ceratium carolinianum cyst					0.116							
Peridinium aciculiferum			2.86	3.27	0.466	0.209	0.053					
EUGLENOPHYTA												
Euglena sp. 1								0.105	3.96			
Trachelmonas sp. 1									1.88			
CHRYSOPHYTA												
Vaucheria sp. 1										20.6		
FLAGELLATES AND MONADS	0.262	0.131	6.12	8.41	5.82	0.105	1.27	2.52	115	69.2	48.8	19.8
TOTAL CELLS PER MM^2	16.6	51.5	136	200	38.8	20.9	10.6	9.14	1870	1800	1531	853

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C- 12

June Periphyton (cells/mm^2)

Taxa	1	1A**	3	3A	5	5A	7	7A	9	9A	12	12A
CYANOPHYTA												
* Anabaena sp. 3							117	56.0	SAMPLERS LOST			
Anacystis incerta			37.4									
A. montana		150	243	112	56.2	30.4	37.4	32.7			279	9.37
* Oscillatoria geminata		710			718		107	271				56.2
* O. limosa						140	56.1					
* O. sp. 1			430									
CHLOROPHYTA												
Bulbochaete sp. 1	131											
Chaetosphaeridium globosum	28.0	37.4										
Characium pringsheimii											6020	
Cloniophora sp. 1											335	
Gonatozygon aculeatum		18.7	18.7									
Cymnogongrus sp. 1											652	515
* Mougeotia sp. 1			243				56.1					
* Oedogonium sp.1											410.	42.1
O. sp. 2											242.	
Pediastrum tetras						2.34						
* Planktonema lauterbornii	701		467	1030								
Protoderma viride		18.7										
S. armatus v. bicaudatus				18.7								
Scenedesmus bijuga		18.7	18.7	18.7		7.01						
S. quadricauda			37.4		12.5	2.34	9.35					
S. spinosus				18.7	6.25							
* Spirogyra sp. 1											224.	
* Stigeoclonium sp. 1												108
Tetraedron sp. 1					6.25							
CHRYSOPHYTA												
Dinobryon calciforme					6.25		9.35	4.67				
Stipitococcus vasiformis		18.7			12.5	16.4	9.35	14.0			93.1	9.37

APPENDIX C-12

June Periphyton (cells/mm^2)

Taxa	station 1	1A**	3	3A	5	5A	7	7A	9	9A	12	12A
BACILLARIOPHYTA												
Achnanthes exigua v. heterovalvata					6.25							
A. microcephala	4340	4080	7910	6020	219	299	771	1060	SAMPLERS		969	23.4
Anemoneis vitrea	411	935	318	243	12.5	14.0		23.3	LOST		261	9.37
Cocconeis placentula v. euglypta											93.1	51.5
Cymbella lunata			18.7				37.4	9.33				
C. microcephala		766.			6.25	9.34	9.35					
C. minuta		18.7	[illegible]	56.1	12.5	14.0	9.35	4.67				
Fragilaria capucina							37.4	18.7			37.3	
F. crotonensis								4.67			74.5	
Gomphonema acuminatum	9.35	74.8	74.8	168			28.1	32.7				
G. affine	140		37.4	74.7	12.5	2.34	88.8	159			168.	28.1
G. carolinense											37.3	
G. truncatum v. capitatum					12.5	2.34					298.	23.4
G. truncatum v. turgidum								4.67				
* Melosira granulata v. angustissima							37.4				74.5	
M. italica v. alpige						2.34						
M. varians											168.	
Navicula notha	131	318	355	168	50.0	42.1	112	88.7			224.	4.68
N. radiosa						4.67						
Nitzschia palea						2.34						
N. sp. 1						46.7	4.68				18.6	
N. sp. 2					6.25	14.0						
Pinnularia abaujensis v. rostrata						2.34						
P. sp. 2						14.0						
Synedra delicatissima	9.35	18.7					4.68	9.33				
S. filiformis		18.7		37.4	50.0		70.1	98.0				
S rumpens v. scotia							4.68					
Tabellaria flocculosa					6.25		9.35	18.7				
PYRRHOPHYTA												
Gymnodinium spp.											18.6	
Peridinium wisconsinense (zygote)						2.34						
EUGLENOPHYTA												
Trachelomonas sp. 2					6.25							
FLAGELLATES AND MONADS	131	187	1270	561	512	164	215	257				913
TOTAL CELLS PER MM^2	6040	7380	11500	8520	1730	834.	1800	2170			12200	1330

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C-13

October-November Periphyton (cells/mm^2)

Taxa	station 1	1A**	3	3A	5	5A	7	7A	9	9A	12	12A
CYANOPHYTA												
Agmenellum quadraduplicatum					1.17							
* Anabaena sp. 1	14.0		18.7	51.5			9.37					
* A. sp.2								7.02				
Anacystis montana	117.	115.	37.3	65.5	15.2	29.2	35.1	60.8	206.	28.1	131.	224.
Coelosphaerium keutzingianum				9.36		1.17						
* Lyngbya sp. 1	18.7											
* Oscillatoria geminata	110.	164.	1090.	823	81.8	90.0	501.	601.			224.	878.
* O. sp. 2							46.8	35.1				
* Spirulina subsalsa		11.7										
CHLOROPHYTA												
Ankistrodesmus falcatus				9.36	4.67	11.7		14.0				
A. falcatus v. acicularis							4.68					
A. falcatus v. tumidus								2.34	18.7			
Bulbochaete sp.												
Chaetophora sp. 1									1200.	912		
Chaetosphaeridium globosum			4.67						9.35			
Characium naegelii											13500.	5790.
C. pringsheimii											2280.	448.
C. rostrum											93.3	18.7
Closteriopsis longissima								2.34				
Crucigenia tetrapedia			4.67									
Lauterborniella elegantissima							2.34					
* Mougeotia sp. 2	16.4	140.	120.									
Oocystis sp.												
Pediastrum tetras			4.67			1.17	2.34					
P. tetras f. evoluta					1.17	1.17						
P. tetras v. tetraodon						1.17						
Quadrigula closterioides								2.34				
Scenedesmus acuminatus					1.17	1.17						
S. armatus v. bicaudatus					1.17	1.17						
S. bijuga			9.33		2.34	2.34	2.34	4.68				
S. quadricauda		2.34	46.7	23.4	7.01	11.7	7.03	16.4	9.35			
S. spinosus								2.34				

APPENDIX C-13

October-November Periphyton (cells/mm^2)

Taxa	station 1	1A	3	3A	5	5A	7	7A	9	9A	12	12A
* Spirogyra sp. 2					9.35							
Tetraedron caudatum					1.17							
T. trigonum					1.17							
CRYPTOPHYTA												
Cryptomonas ovata	4.67	4.67			2.34	1.17		2.34				
CHRYSOPHYTA												
Dinobryon calciforme					1.17	2.34						
Stipiticoccus vasiformis				4.68	2.34			2.34				
BACILLARIOPHYTA												
Achnanthes exigua v. heterovalvata		4.67		9.36	1.17	1.17		7.02				
A. microcephala	112.	103.	28.0	323.	3.50	5.85	136.	140.	6550.	1110.	803.	2170.
Anemoneis vitrea	56.1	72.4	23.0	60.8		1.17	9.37	4.68	262.	60.8	280.	37.4
Asterionella formosa v. gracillima							2.34	2.34				
Cocconeis placentula v. euglypta					2.34	1.17					18.7	18.7
Cymbella affinis	4.67											
C. lunata		2.34										
C. microcephala	7.01	37.4	4.67	28.1	2.34	1.17	4.68	7.02			18.7	
C. minuta				9.36	2.34		7.03	2.34	9.35			18.7
Desmogonium rabenhorstianum v. elongatum									28.0	4.68		
Diploneis puella						2.34		2.34				
Entomoneis ornata			4.67									
Eunotia curvata									9.35	70.2		
E. flexuosa									178.	60.8		
E. pectinalis V. minor									9.35			
Fragilaria capucina	16.4	21.0	9.33		3.50			4.68	65.4	4.68	18.7	
F. crotonensis	4.67								37.4			
Gomphonema acuminatum	14.0	11.7	9.33	14.0			2.34	2.34	28.0	18.7		
G. affine	7.01	14.0	4.67	14.0			9.37		18.7	18.7	37.4	
G. truncatum v. capitatum		2.34									112.	18.7
* Melosira granulata v. angustissima					32.7	47.9		105.				
M. italica v. alpigena		7.01	9.33	4.68	1.17	1.17	4.68	2.34				
Navicula cuspidata		2.34			1.17							
N. elginensis v. rostrata					1.17					4.68		
Nitzschia acicularis						1.17	9.37	14.0				
N. lorenziana	2.34	7.01		4.68								
N. notha	79.4	119.	65.3	122.	8.18	3.51	32.8	16.4	28.0		37.4	
N. sp. 3		2.34		9.36								
Pinnularia biceps						1.17						
P. sp. 3							7.03	2.34				

APPENDIX C-13

October-November Periphyton (cells/mm^2)

Taxa	station 1	1A	3	3A	5	5A	7	7A	9	9A	12	12A
Surirella ovalis	2.34	2.34		4.68								
S. sp. 1								2.34				
Synedra delicatissima					1.17	3.51	2.34	2.34	9.35			
S. filiformis	7.01	2.34	46.7	103.	8.18	7.02	58.6	49.1	9.35	4.68		
PYRRHOPHYTA												
Gymnodinium sp.		4.67										
Peridinium aciculiferum						2.34						
P. spp.												
EUGLENOPHYTA												
Lepocinclis longicauda								2.34				
Phacus sp. 1						1.17						
Trachelomonas sp. 3						2.34						
FLAGELLATES AND MONADS	287.	278.	345.	267.	151.	185.	141.	267.	514.	93.5	579.	579.
CYSTS AND ZYGOTES	2.34				3.50	3.51						
TOTAL CELLS PER MM^2	885.	1130.	1880.	1960.	361.	428.	1030	1390	9200.	2390.	18100.	10200.

* values reported are length segments of 10 um

** "A" designates a field duplicate

APPENDIX C-14. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING FEBRUARY-MARCH IN PERIPHYTON SAMPLES FROM SEVEN STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	896	896	26.38	26.38
	CHLOROPHYTA	3	899	0.09	26.47
	CHRYSOPHYTA	0	899	0.00	26.47
	BACILLARIOPHYTA	2478	3377	72.97	99.44
	PYRRHOPHYTA	0	3377	0.00	99.44
	EUGLENOPHYTA	0	3377	0.00	99.44
	FLAGELLATES-MONA	19	3396	0.56	100.00
3	CYANOPHYTA	3165	3165	18.87	18.87
	CHLOROPHYTA	277	3442	1.65	20.52
	CHRYSOPHYTA	0	3442	0.00	20.52
	BACILLARIOPHYTA	12299	15741	73.32	93.84
	PYRRHOPHYTA	306	16047	1.82	95.67
	EUGLENOPHYTA	0	16047	0.00	95.67
	FLAGELLATES-MONA	727	16774	4.33	100.00
5	CYANOPHYTA	1304	1304	44.47	44.47
	CHLOROPHYTA	425	1729	14.50	58.97
	CHRYSOPHYTA	0	1729	0.00	58.97
	BACILLARIOPHYTA	869	2598	29.64	88.61
	PYRRHOPHYTA	38	2636	1.30	89.90
	EUGLENOPHYTA	0	2636	0.00	89.90
	FLAGELLATES-MONA	296	2932	10.10	100.00
7	CYANOPHYTA	673	673	55.30	55.30
	CHLOROPHYTA	4	677	0.33	55.63
	CHRYSOPHYTA	0	677	0.00	55.63
	BACILLARIOPHYTA	344	1021	28.27	83.89
	PYRRHOPHYTA	2	1023	0.16	84.06
	EUGLENOPHYTA	5	1028	0.41	84.47
	FLAGELLATES-MONA	189	1217	15.53	100.00
9	CYANOPHYTA	9290	9290	5.05	5.05
	CHLOROPHYTA	28949	38239	15.75	20.80
	CHRYSOPHYTA	1030	39269	0.56	21.36
	BACILLARIOPHYTA	135100	174369	73.48	94.84
	PYRRHOPHYTA	0	174369	0.00	94.84
	EUGLENOPHYTA	282	174651	0.15	94.99
	FLAGELLATES-MONA	9210	183861	5.01	100.00
12	CYANOPHYTA	26612	26612	22.33	22.33
	CHLOROPHYTA	66150	92762	55.50	77.83
	CHRYSOPHYTA	0	92762	0.00	77.83
	BACILLARIOPHYTA	22991	115753	19.29	97.12
	PYRRHOPHYTA	0	115753	0.00	97.12
	EUGLENOPHYTA	0	115753	0.00	97.12
	FLAGELLATES-MONA	3430	119183	2.88	100.00

10 20 30 40 50 60 70

PERCENTAGE

APPENDIX C-15. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING JUNE IN PERIPHYTON SAMPLES FROM SEVEN STATIONS IN HARTWELL LAKE.

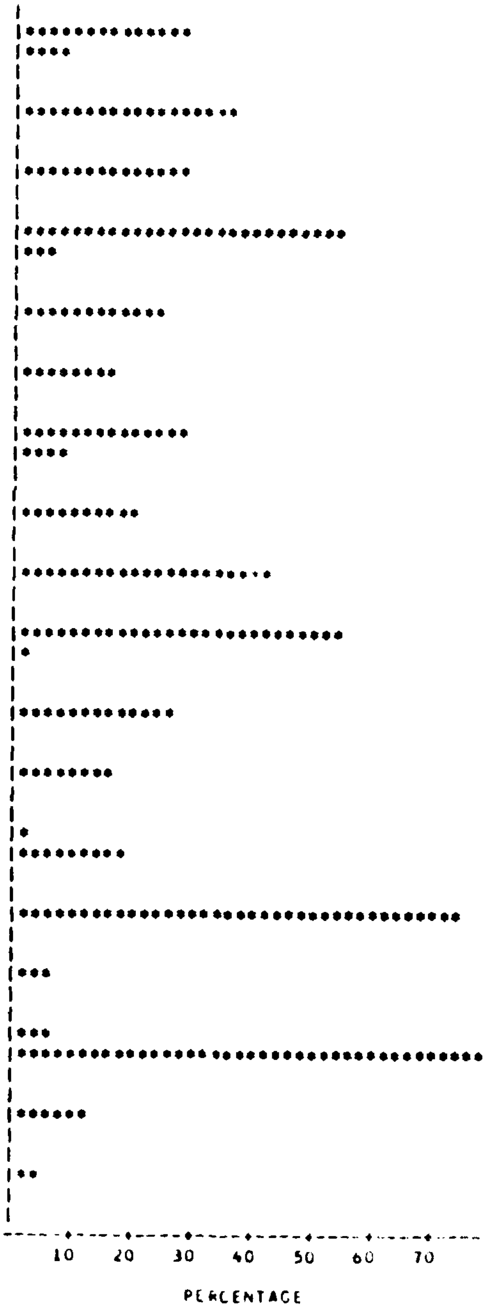
STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	43000	43000	6.52	6.52
	CHLOROPHYTA	35991	78991	5.46	11.98
	CHRYSOPHYTA	935	79926	0.14	12.12
	BACILLARIOPHYTA	563529	643455	85.47	97.59
	PYRRHOPHYTA	0	643455	0.00	97.59
	EUGLENOPHYTA	0	643455	0.00	97.59
	FLAGELLATES-MONA	15900	659355	2.41	100.00
3	CYANOPHYTA	41120	41120	4.11	4.11
	CHLOROPHYTA	93545	134665	9.34	13.45
	CHRYSOPHYTA	0	134665	0.00	13.45
	BACILLARIOPHYTA	774990	909655	77.41	90.86
	PYRRHOPHYTA	0	909655	0.00	90.86
	EUGLENOPHYTA	0	909655	0.00	90.86
	FLAGELLATES-MONA	91550	1001205	9.14	100.00
5	CYANOPHYTA	47230	47230	36.83	36.83
	CHLOROPHYTA	1833	49063	1.43	38.26
	CHRYSOPHYTA	1757	50820	1.37	39.63
	BACILLARIOPHYTA	43173	93993	33.67	73.30
	PYRRHOPHYTA	117	94110	0.09	73.40
	EUGLENOPHYTA	312	94422	0.24	73.64
	FLAGELLATES-MONA	33800	128222	26.36	100.00
7	CYANOPHYTA	33860	33860	16.90	16.90
	CHLOROPHYTA	3272	37132	1.63	18.53
	CHRYSOPHYTA	1868	39000	0.93	19.46
	BACILLARIOPHYTA	137800	176800	68.76	88.22
	PYRRHOPHYTA	0	176800	0.00	88.22
	EUGLENOPHYTA	0	176800	0.00	88.22
	FLAGELLATES-MONA	23600	200400	11.78	100.00
9	CYANOPHYTA	0	0	0.00	0.00
	CHLOROPHYTA	0	0	0.00	0.00
	CHRYSOPHYTA	0	0	0.00	0.00
	BACILLARIOPHYTA	0	0	0.00	0.00
	PYRRHOPHYTA	0	0	0.00	0.00
	EUGLENOPHYTA	0	0	0.00	0.00
	FLAGELLATES-MONA	0	0	0.00	0.00
12	CYANOPHYTA	17228	17228	2.83	2.83
	CHLOROPHYTA	404230	421458	66.39	69.22
	CHRYSOPHYTA	5123	426581	0.84	70.06
	BACILLARIOPHYTA	128167	554768	21.05	91.12
	PYRRHOPHYTA	930	555698	0.15	91.27
	EUGLENOPHYTA	0	555698	0.00	91.27
	FLAGELLATES-MONA	53150	608848	8.73	100.00

10 20 30 40 50 60 70 80

PERCENTAGE

APPENDIX C-16. PERCENT COMPOSITION OF ALGAL DIVISIONS OCCURRING DURING OCTOBER-NOVEMBER IN PERIPHYTON SAMPLES FROM SEVEN STATIONS IN HARTWELL LAKE.

STATION	DIVISION	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1	CYANOPHYTA	27520	27520	27.32	27.32
	CHLOROPHYTA	7937	35457	7.88	35.20
	CRYPTOPHYTA	467	35924	0.46	35.66
	CHRYSOPHYTA	0	35924	0.00	35.66
	BACILLARIOPHYTA	36205	72129	35.94	71.61
	PYRRHOPHYTA	233	72362	0.23	71.84
	EUGLENOPHYTA	0	72362	0.00	71.84
	FLAGELLATES-MONA	28250	100612	28.05	99.88
	ZYGOTES	117	100729	0.12	100.00
3	CYANOPHYTA	104768	104768	54.47	54.47
	CHLOROPHYTA	11138	115906	5.79	60.26
	CRYPTOPHYTA	0	115906	0.00	60.26
	CHRYSOPHYTA	234	116140	0.12	60.38
	BACILLARIOPHYTA	45598	161738	23.71	84.09
	PYRRHOPHYTA	0	161738	0.00	84.09
	EUGLENOPHYTA	0	161738	0.00	84.09
	FLAGELLATES-MONA	30600	192338	15.91	100.00
	ZYGOTES	0	192338	0.00	100.00
5	CYANOPHYTA	10926	10926	27.69	27.69
	CHLOROPHYTA	3037	13963	7.70	35.38
	CRYPTOPHYTA	175	14138	0.44	35.83
	CHRYSOPHYTA	292	14430	0.74	36.56
	BACILLARIOPHYTA	7591	22021	19.24	55.80
	PYRRHOPHYTA	117	22138	0.30	56.10
	EUGLENOPHYTA	175	22313	0.44	56.54
	FLAGELLATES-MONA	16800	39113	42.57	99.11
	ZYGOTES	351	39464	0.89	100.00
7	CYANOPHYTA	64809	64809	53.41	53.41
	CHLOROPHYTA	3158	67967	2.60	56.01
	CRYPTOPHYTA	117	68084	0.10	56.11
	CHRYSOPHYTA	117	68201	0.10	56.20
	BACILLARIOPHYTA	32626	100827	26.89	83.09
	PYRRHOPHYTA	0	100827	0.00	83.09
	EUGLENOPHYTA	117	100944	0.10	83.19
	FLAGELLATES-MONA	20400	121344	16.81	100.00
	ZYGOTES	0	121344	0.00	100.00
9	CYANOPHYTA	11705	11705	2.02	2.02
	CHLOROPHYTA	107469	119174	18.54	20.56
	CRYPTOPHYTA	0	119174	0.00	20.56
	CHRYSOPHYTA	0	119174	0.00	20.56
	BACILLARIOPHYTA	430006	549180	74.20	94.76
	PYRRHOPHYTA	0	549180	0.00	94.76
	EUGLENOPHYTA	0	549180	0.00	94.76
	FLAGELLATES-MONA	30375	579555	5.24	100.00
	ZYGOTES	0	579555	0.00	100.00
12	CYANOPHYTA	72850	72850	5.14	5.14
	CHLOROPHYTA	1106500	1179350	78.10	83.25
	CRYPTOPHYTA	0	1179350	0.00	83.25
	CHRYSOPHYTA	0	1179350	0.00	83.25
	BACILLARIOPHYTA	179470	1358820	12.67	95.91
	PYRRHOPHYTA	0	1358820	0.00	95.91
	EUGLENOPHYTA	0	1358820	0.00	95.91
	FLAGELLATE -MONA	57900	1416720	4.09	100.00
	ZYGOTES	0	1416720	0.00	100.00



APPENDIX D

ZOOPLANKTON

APPENDIX LIST

APPENDIX D-1

February Zooplankton Densities (#/m^3)

TAXON	1			2			3			4			5			6			7			8		
	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X
Rotifers																								
Asplanchna sp.	-	-	-	-	-	-	-	-	-	4.5	1.3	2.9	12.6	1.4	7.0	-	-	-	-	-	-	-	-	-
Kellicottia bostoniensis	-	-	-	-	-	-	-	-	-	.51	.20	.35	-	-	-	-	.11	.055	-	-	-	-	-	-
Keratella cochlearis	.31	.22	.27	.12	.087	.10	35	53	44	45	48	47	12	5.4	8.7	.23	.23	.23	1.5	.92	1.2	-	.13	.065
Polyarthra sp.	13	13	13	11	8.5	9.8	21	15	18	42	25	34	20	7.5	14	15	16	16	13	12	13	1.4	.79	1.1
unidentified rotifers	.061	-	.030	.37	.35	.36	-	-	-	-	-	-	-	-	-	.30	.10	.21	.59	-	.30	-	-	-
Cladocera																								
Alona costata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.001	<.001	<.001	-	-	-
Bosmina longirostris	2.0	2.5	2.3	2.7	2.2	2.5	5.0	4.0	2.5	5.9	4.6	5.3	1.1	.49	.80	7.4	11	9.1	4.8	4.0	4.4	1.0	2.1	1.6
Ceriodaphnia quadrangula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.001	<.001	<.001	-	-	-	-	-	-
Chydorus sphaericus	<.001	-	<.001	-	-	-	-	-	-	-	-	-	-	-	-	<.001	-	<.001	-	<.001	<.001	-	-	-
Daphnia parvula	.0059	.0074	.0066	.076	.048	.062	.026	.0058	.016	.030	.022	.026	.0097	-	.0049	.078	.18	.13	.080	.071	.076	-	.025	.013
Diaphanosoma brachyurum	-	-	-	-	-	-	<.001	<.001	<.001	-	-	-	<.001	<.001	<.001	-	-	-	-	-	-	-	-	-
Holopedium amazonicum	.022	.026	.024	.0039	.0039	.0039	-	.0058	.0029	-	-	-	.019	-	.010	.012	.017	.015	.060	.11	.085	.0057	.033	.019
Copepoda																								
Calanoida																								
Diaptomus mississippiensis	.22	.15	.19	.10	.095	.098	.15	.23	.19	.070	.11	.090	.024	.039	.032	.12	.25	.19	.15	.63	.39	.18	.16	.17
Cyclopoida																								
Cyclops bicuspidatus thomasi adults	.017	.015	.016	.049	.006	.028	2.0	2.7	2.4	4.7	3.6	4.2	.63	.45	.54	-	.049	.025	.20	.14	.17	-	-	-
Mesocyclops edax adults	-	-	-	-	-	-	-	-	-	-	-	-	-	.0093	.0047	-	-	-	.031	.043	.037	.0076	-	.0038
Paracyclops fimbriatus poppei adults	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.0076	.028	.018
Tropocyclops prasinus adults	.28	.29	.29	.18	.12	.15	-	.60	.30	.20	1.0	.60	-	.31	.16	.31	.41	.36	.057	.12	.089	.17	.42	.30
cyclopoid copepodids	1.5	1.3	1.4	1.6	.65	1.1	13	35	24	20	25	23	4.3	4.9	4.6	4.9	5.7	5.3	1.5	1.9	1.7	7.8	16	12
copepod nauplii	3.1	.18	2.5	3.5	3.6	3.6	21	26	24	71	57	64	46	17	32	10	6.9	8.5	5.4	6.7	6.1	26	36	31
TOTAL DENSITY			20			18			115			182			68			40			27			46

APPENDIX D-2

April Zooplankton Densities (#/m^3)

TAXON	1 A	1 B	1 X	2 A	2 B	2 X	3 A	3 B	3 X	4 A	4 B	4 X
Rotifers												
Asplanchna sp.	-	-	-	.0070	.037	.022	.21	.26	.24	11	1.8	6.4
Conochilus unicornis	-	.0075	.0038	.011	-	.0053	.45	.39	.42	4.4	1.8	3.1
Kellicottia bostoniensis	-	-	-	-	.42	.21	-	.56	.28	-	.57	.29
Keratella cochlearis	-	<.001	<.001	1.4	3.1	2.3	29	17	23	100	74	88
Monostyla sp.	-	-	-	-	-	-	-	-	-	-	.57	.29
Polyarthra sp.	5.1	5.0	5.1	16	20	18	25	8.2	17	41	19	30
Trichocerca sp.	-	-	-	1.6	2.9	2.3	4.4	3.7	4.0	-	.57	.29
unidentified rotifers	.033	-	.017	.80	1.3	1.1	-	2.0	1.0	6.6	2.9	4.7
Cladocera												
Alona costata	.0083	-	.0042	-	-	-	.0077	.0099	.0088	-	-	-
Bosmina longirostris	2.3	5.1	3.7	7.6	8.8	8.2	42	24	33	30	30	34
Chydorus sphaericus	-	-	-	.0035	.0037	.0036	-	.0050	.0025	.029	.030	.030
Daphnia parvula	.0055	.0019	.0037	.021	.0074	.014	.077	.065	.071	.049	.030	.40
Diaphanosoma brachyurum	-	.0019	.0010	.0035	.0037	.0036	-	.0099	.0050	.0097	-	.0049
Holopedium amazonicum	.011	.024	.018	.011	.0037	.0074	.031	.015	.023	.039	.01	.025
Leptodora kindtii	-	.0019	.0010	-	.0037	.0019	-	-	-	-	-	-
Copepoda												
Calanoida												
Diaptomus mississippiensis adults	.0028	.0019	.0024	.0070	-	.0035	.015	.045	.030	-	-	-
copepodids	.064	.045	.055	.081	.070	.076	.25	.12	.19	.24	.17	.21
Cyclopoida												
Cyclops bicuspidatus thomasi adults	.053	.049	.051	.070	.23	.15	.22	1.0	.61	-	-	-
Tropocyclops prasinus adults	.044	.041	.043	.14	.45	.30	.22	.15	.19	1.4	.62	1.0
Paracyclops fimbriatus poppei adults	-	-	-	-	-	-	-	-	-	-	-	-
Cyclopoid copepodids	.36	.33	.35	1.6	2.2	1.9	12	15	13	24	18	21
Copepod nauplii	.46	.85	.66	2.8	5.5	4.1	67	32	50	120	83	102
Ostracoda	.0028	-	.0014	-	.0074	.0037	-	-	-	-	.018	.005
TOTAL			10			39			143			292

TAXON	5 A	5 B	5 X	6 A	6 B	6 X	7 A	7 B	7 X	8 A	8 B	8 X
Rotifers												
Asplanchna sp.	26	2.5	16	.075	.049	.062	3.3	2.1	2.7	15	1.7	8.2
Conochilus unicornis	4.4	2.5	3.5	.15	-	.075	.096	-	.048	9.7	1.2	5.5
Kellicottia bostoniensis	-	-	-	-	-	-	-	-	-	-	-	-
Keratella cochlearis	6.1	3.9	5.0	.74	1.5	1.1	.96	.48	.72	14	8.4	11
Monostyla sp.	-	-	-	-	-	-	-	-	-	-	-	-
Polyarthra sp.	17	5.7	11	18	26	22	11	10	11	21	15	18
Trichocerca sp.	.55	-	.28	-	-	-	-	-	-	-	-	-
unidentified rotifers	3.3	2.5	2.9	.29	.21	.25	.67	.38	.53	-	2.2	1.1
Cladocera												
Alona costata	-	-	-	-	-	-	.012	.045	.029	-	-	-
Bosmina longirostris	45	13	29	32	39	36	25	16	21	11	15	13
Chydorus sphaericus	.078	.016	.047	-	-	-	.010	.043	.027	.014	-	.007
Daphnia parvula	.15	.056	.10	.21	.35	.28	.70	.61	.66	-	<.001	<.001
Diaphanosoma brachyurum	.029	.013	.021	-	-	-	.015	.010	.013	.014	.031	.023
Holopedium amazonicum	.049	.0094	.029	.036	.042	.039	.038	.033	.036	.014	-	.007
Leptodora kindtii	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda												
Calanoida												
Diaptomus mississippiensis adults	.020	.0031	.012	.054	.030	.032	.020	.0061	.013	-	-	-
copepodids	.42	.18	.30	.068	.12	.094	.20	.16	.18	<.001	.023	.012
Cyclopoida												
Cyclops bicuspidatus thomasi adults	-	-	-	.49	.82	.66	.089	.12	.10	.051	<.001	.026
Tropocyclops prasinus adults	-	-	-	<.001	.12	.06	-	-	-	.61	.32	.47
Paracyclops fimbriatus poppei adults	-	-	-	-	-	-	-	-	-	-	.078	.039
Cyclopoid copepodids	25	73	16	5.7	5.3	5.5	4.7	2.9	3.8	5.8	5.0	5.4
Copepod nauplii	72	25	49	7.8	4.7	6.3	3.7	4.7	4.2	21	23	22
Ostracoda	-	-	-	-	-	-	.0051	.0041	.0046	-	-	-
TOTAL			133			73			45			85

APPENDIX D-3

June Zooplankton Densities (#/m^3)

TAXON	1 A	1 B	1 X	2 A	2 B	2 X	3 A	3 B	3 X	4 A	4 B	4 X	5 A	5 B	5 X	6 A	6 B	6 X	7 A	7 B	7 X	8 A	8 B	8 X
Cnidaria																								
Hydra	-	-	-	-	-	-	-	-	-	-	.12	.060	-	-	-	-	-	-	-	-	-	-	-	-
Rotifera																								
Asplanchna sp.	3.2	10	6.6	2.2	1.1	1.7	8.0	3.0	6.0	11	8.7	9.9	7.5	5.9	6.7	.33	.35	.34	-	-	-	50	143	97
Conochilus unicornis	-	-	-	.028	.0052	.017	.45	1.5	1.0	2.8	1.2	2.0	2.2	1.7	2.0	.49	.22	.36	-	-	-	-	-	-
Keratella cochlearis	6.5	28	17	13	13	13	13	19	16	29	13	21	18	8.7	13	44	21	33	7.1	11	9.1	68	207	138
Polyarthra sp.	4.5	17	11	4.7	5.9	5.3	2.2	4.2	3.2	6.3	3.9	5.1	8.6	11	9.8	8.5	5.3	6.9	4.3	6.3	5.3	6.9	32	19
Trichocerca sp.	.060	-	.030	2.2	.53	1.4	8.8	9.5	9.2	18	16	17	24	24	26	-	.67	.34	-	-	-	3.8	28	16
Unidentified Rotifers	.42	.49	.46	-	-	-	.29	-	.15	-	-	-	-	-	-	5.0	.67	2.8	17	24	21	36	97	67
Cladocera																								
Alona costata	-	-	-	-	-	-	.0034	.0044	.0039	-	.0051	.0026	.0047	-	.0024	-	-	-	-	-	-	-	-	-
Bosmina longirostris	3.5	20	12	5.3	4.6	5.0	22	16	19	95	44	70	105	56	81	2.1	1.1	1.6	.36	.36	.36	10	22	16
Ceriodaphnia quadrangula	.060	.24	.15	.11	.042	.076	.065	.076	.071	.26	.12	.19	.078	.0068	.024	.23	.10	.17	-	-	-	-	-	-
Chydorus sphaericus	.0070	.012	.010	.0040	-	.0020	-	-	-	.025	.010	.018	.0078	.0034	.0056	-	-	-	-	-	-	-	-	-
Daphnia parvula	.46	1.3	.88	.28	.35	.32	.23	.32	.28	.50	.32	.41	-	-	-	.30	.41	.36	.85	.68	.77	-	-	-
Diaphanosoma brachyurum	.37	1.2	.79	.41	.27	.34	.16	.15	.16	.34	.27	.31	.58	.88	.73	6.1	2.3	4.2	9.5	11	10	.082	.095	.089
Holopedium amazonicum	.90	4.9	2.9	.45	.42	.44	.22	.18	.20	.17	.13	.15	.014	.010	.012	5.1	2.4	3.8	.82	.77	.80	.045	.047	.046
Leptodora kindtii	.0035	.12	.062	.032	.042	.037	.0034	.022	.013	.058	.026	.042	-	-	-	.065	.036	.051	.024	.10	.062	-	-	-
Copepoda																								
Calanoida																								
Diaptomus mississippiensis adults	.074	.20	.14	.077	.052	.065	.055	.085	.070	1.1	.77	.94	.13	.071	.10	.14	.11	.13	.072	.13	.10	-	-	-
Copepodids	.30	1.27	.79	.21	.20	.20	.89	.73	.81	.22	.056	.14	1.2	.68	1.0	.38	.12	.25	.36	.36	.36	.052	.071	.062
Cyclopoida																								
Cyclops bicuspidatus thomasi adults	-	-	-	-	-	-	.0029	.0044	.0037	-	-	-	-	-	-	-	.0033	.0017	-	-	-	-	-	-
Eucyclops agilis adults	-	-	-	-	-	-	-	-	-	-	.0043	.0022	-	-	-	.0060	-	.0030	-	-	-	-	-	-
Mesocyclops edax adults	-	.49	.25	.57	.62	.60	-	-	-	-	-	-	.039	.014	.027	.0072	.0065	.0067	.90	.64	.77	-	-	-
Tropocyclops prasinus adults	4.1	25	15	2.9	2.5	2.7	1.2	1.5	1.4	11	6.5	8.8	16	9.2	13	1.7	1.1	1.4	.48	.44	.46	1.3	2.0	1.7
Copepodids	6.7	35	21	7.3	6.3	6.8	2.9	1.9	2.4	31	17	24	31	17	24	4.8	2.9	3.9	4.7	3.8	4.3	10	40	25
Nauplii	12	61	37	13	14	14	16	14	15	79	38	59	76	51	64	14	7.4	11	11	16	14	23	76	50
Ostracoda	-	.012	.0060	-	-	-	-	-	-	.0083	-	.0042	-	.010	.0050	-	-	-	-	-	-	-	-	-
Insecta																								
Chaoborus sp.	-	.023	.012	-	.0052	.0026	-	-	-	.041	.015	.028	.061	.058	.060	.015	.0033	.0092	.084	.095	.089	-	-	-
TOTAL			126			52			75			219			241			71			67			430

APPENDIX D-4

July Zooplankton Densities (#/m^3)

TAXON	1			2			3			4			5			6			7			8		
	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X
Rotifera																								
Asplanchna sp.	-	-	-	-	-	-	-	-	-	-	-	-	.032	.0092	.020	.0031	.016	.0097	2.4	2.5	2.4	-	-	-
Brachionus havanaensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.83	2.4	1.6
Conochilus unicornis	-	-	-	-	-	-	.59	.49	.54	1.0	5.5	3.3	.47	.028	.25	.019	.057	.039	.10	.080	.090	1.2	1.6	1.4
Kellicottia bostoniensis	.18	.055	.12	.65	.18	.40	.29	-	.15	-	-	-	-	-	-	.27	.17	.22	-	-	-	-	-	-
Keratella cochlearis	3.4	3.5	3.5	3.4	8.4	5.9	37	84	61	24	62	43	2.8	.86	1.8	2.7	2.9	2.8	16	13	14	4.7	7.9	6.3
Keratella sp.	.52	.44	.48	.24	-	.12	12	27	19	11	30	21	67	9.3	38	-	.37	.18	18	14	16	25	43	34
Platyias patulas	-	-	-	-	-	-	-	-	-	.075	-	.037	.0079	.0037	.0058	-	-	-	.0051	.0044	.0048	-	.023	.011
Ploesoma sp.	-	-	-	.16	.22	.19	.70	2.9	1.8	3.8	7.1	5.5	13	23	18	.74	1.2	.95	10	9.8	9.9	2.0	4.6	3.4
Polyarthra sp.	.20	.28	.29	.47	1.6	1.1	15	34	25	5.3	12	8.6	5.9	1.8	3.8	.53	1.4	.96	3.5	6.8	5.2	5.0	9.7	7.3
Ptygura sp.	121	86	103	63	135	99	14	55	35	15	12	14	2.5	.006	1.3	63	78	71	26	25	26	1.7	2.4	2.0
Trichocerca sp.	.12	.11	.12	.16	-	.079	3.8	6.8	5.3	1.5	2.4	1.9	.56	.53	.54	.27	.87	.57	7.5	8.7	8.1	5.8	4.8	3.4
Cladocera																								
Alona costata	-	-	-	-	.0063	.0032	.010	-	.0052	-	-	-	-	-	-	-	.0041	.0021	-	-	-	-	-	-
Bosmina longirostris	1.1	.59	.83	.48	1.8	1.1	13	31	22	5.0	10	7.6	5.2	.65	2.9	.60	.55	.58	.35	.28	.32	2.4	4.8	3.6
Bosminopsis dietersi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	5.2	5.7
Ceriodaphnia quadrangula	.12	.10	.11	.085	.46	.27	1.2	2.7	1.9	.91	5.2	3.0	.016	-	.0080	.0062	.012	.0092	.020	.037	.029	.18	.23	.20
Chydorus sphaericus	-	-	-	.0031	-	.0016	-	.017	.0086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Daphnia parvula	-	-	-	.0074	.013	.010	.010	.017	.014	-	-	-	-	-	-	.019	.020	.020	-	-	-	-	-	-
Diaphanosoma brachyurum	1.1	.82	.94	2.1	6.6	4.4	14	33	23	4.1	13	8.7	.13	.0055	.070	2.4	2.5	2.4	.66	.81	.73	.22	.50	.36
Holopedium amazonicum	.048	-	.024	.088	.36	.26	.19	.36	.27	.27	1.0	.64	.032	.0037	.018	.075	.081	.078	.15	.11	.13	-	.068	.034
Leptodora kindtii	.061	.011	.036	.048	.18	.11	.021	.086	.053	-	-	-	-	-	-	.025	.0081	.017	.0051	-	.0026	-	-	-
Moina minuta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.41	.68	.54
Copepoda																								
Calanoida																								
Diaptomus mississippiensis adults	.53	.72	.63	1.4	7.5	4.5	1.5	3.4	2.4	.075	.17	.12	-	-	-	.79	.78	.79	.076	.042	.059	.012	.068	.040
copepodids	4.2	3.4	3.8	6.3	22	14	5.6	13	9.3	.37	1.3	.85	.016	.0018	.0088	4.6	5.1	4.8	.22	.29	.26	.093	.20	.15
Cyclopoida																								
Tropocyclops prasinus adults	.061	.033	.047	.015	.36	.19	11	30	21	4.4	8.0	6.2	1.1	.13	.64	.26	.20	.23	.53	.37	.45	.33	.48	.40
Mesocyclops edax adults	.036	.077	.057	.085	.20	.14	.29	-	.15	-	-	-	-	-	-	.18	.21	.19	-	-	-	.012	-	.0058
Cyclopoid copepodids	.57	.42	.50	.18	.56	.37	24	51	37	3.1	8.8	6.0	1.1	.18	.66	.39	.54	.46	.81	.48	.64	.68	1.7	1.2
Nauplii	14	16	15	13	31	22	40	83	61	5.4	11	8.3	5.3	.63	3.0	10	14	12	1.5	1.6	1.6	31	60	45
Insecta																								
Chaoborus sp.	-	-	-	-	-	-	.010	-	.0050	.015	.033	.024	-	.0018	<.001	.0031	-	.0016	-	-	-	-	-	-
TOTAL			129			154			326			139			71			98			86			117

APPENDIX D-5

October Zooplankton Densities (#/m^3)

TAXON	1			2			3			4			5			6			7			8		
	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X	A	B	X
Rotifera																								
Asplanchna sp.	.012	.019	.016	.75	.43	.59				.40	.044	.22	.71	.56	.63	.054	.057	.055	57	54	55	1.7	6.0	3.9
Conochilus unicornis	-	-	-	.0083	-	.0042				1.8	.13	.90	.35	.56	.45	.049	.068	.058	.011	.13	.072	.45	1.9	1.2
Kellicottia bostoniensis	-	-	-	.30	.91	.60				15	4.2	9.7	.41	-	.21	3.3	2.0	2.7	1.2	.53	.84	-	-	-
Keratella cochlearis	23	27	25	21	21	21				620	115	367	53	149	101	11	12	12	213	280	247	136	387	262
Keratella sp.	-	-	-	-	-	-		Not		.95	-	.48	2.9	12	7.5	.17	-	.087	7.3	12	9.7	4.2	11	7.5
Lecane sp.	.15	-	.075	-	-	-				-	-	-	-	-	-	-	-	-	-	1.1	.53	-	-	-
Monostyla sp.	-	-	-	.30	-	.15				-	-	-	-	-	-	.17	-	.087	-	-	-	-	-	-
Platyias patulus	-	-	-	-	-	-		Sampled		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ploesoma sp.	7.3	4.2	5.8	4.7	8.0	6.4				1.9	1.1	1.1	55	158	107	6.3	5.5	5.9	34	43	38	63	149	106
Polyarthra sp.	5.1	5.0	5.0	7.7	7.1	7.4				173	23	98	20	61	41	9.0	7.0	8.0	34	37	36	23	80	52
Ptygura sp.	.15	.39	.27	.30	.46	.38				1.9	-	.96	2.1	1.8	1.9	.52	.80	.66	-	-	-	1.9	1.1	1.5
Trichocerca sp.	5.7	7.6	6.7	3.9	8.2	6.0				50	9.1	29	3.3	17	10	3.0	4.1	3.6	5.4	8.4	6.9	4.2	17	11
Cladocera																								
Alona costata	-	-	-	-	-	-				.027	.0063	.017	-	-	-	-	-	-	-	-	-	-	.031	.046
Bosmina longirostris	3.1	3.3	3.2	.95	.40	.68				4.3	.73	.25	.99	2.7	1.8	6.3	8.4	7.3	10	17	14	.89	3.1	2.0
Ceriodaphnia quadrangula	.0083	.0027	.0055	.48	.28	.38				2.6	.71	1.7	-	.25	.0128	.68	.90	.79	-	-	-	.16	.61	.38
Chydorus sphaericus	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	.013	-	.0066
Daphnia parvula	.0041	-	.0021	.025	.019	.022				1.8	.21	1.0	-	-	-	.083	.060	.072	.022	-	.011	.040	.27	.157
Diaphanosoma brachyurum	.51	.59	.60	1.4	.71	1.1				.32	.11	.22	.070	.025	.048	.41	.28	.35	-	-	-	.27	.73	.50
Holopedium amazonicum	.083	.060	.071	-	.032	.016				.054	.013	.033	-	-	-	.0098	.011	.011	.043	.15	.096	.013	.061	.037
Leptodora kindtii	-	.0083	.0041	.033	.0064	.020				.027	-	.014	-	.025	.013	.0098	.001	.011	-	.030	.015	.027	.031	.029
Copepoda																								
Calanoida																								
Diaptomus mississippiensis adults	-	.0082	.0041	.0083	-	.0042				.054	.019	.036	-	-	-	.17	.14	.15	-	-	-	.040	.18	.11
copepodids	.012	.011	.012	.70	.51	.61				2.0	.40	1.7	.11	.051	.078	.86	.87	.87	.098	.030	.064	.46	1.5	.96
Cyclopoida																								
Mesocyclops edax adults	-	-	-	-	-	-				-	-	-	-	-	-	.0050	.0070	.0060	-	-	-	.20	.64	.42
Tropocyclops prasinus adults	.0083	.0082	.0082	.14	.17	.16				.51	.11	.31	.070	[illegible]	.31	.025	.045	.035	.41	.52	.47	.11	.58	.34
Cyclopoid copepodids	.45	.28	.36	1.4	1.0	1.2				4.8	.99	2.9	.26	.48	.37	.44	.61	.52	1.1	.90	.98	.98	3.2	2.1
Copepod nauplii	3.1	2.3	2.7	2.4	3.4	2.9				49	12	30	9.5	[illegible]	13	12	15	13	16	7.9	12	11	30	21
Ostracoda	-	-	-	.017	-	.0084				.054	.0063	.030	-	.025	.013	-	-	-	-	-	-	-	-	-
Insecta																								
Chaoborus sp.	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	.001	-	.0054	.013	-	.0066
TOTAL			50			50						545			255			56			272			[illegible]

APPENDIX E

MACROBENTHIC INVERTEBRATES

APPENDIX LIST

APPENDIX E-1

April Ponar Densities

(#/m^2)

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	10	-	-	10	3	60	40	70	57
Ectoprocta																								
Pectinella magnifica	-	-	-	-	-	-	-	-	*	*	-	*	-	-	-	-	-	-	*	*	-	-	-	-
Mollusca																								
Bivalvia																								
Corbicula manilensis	40	-	10	17	40	-	-	13	10	-	-	3	-	-	-	-	10	-	-	3	-	-	-	-
Juvenile Corbiculacea	860	410	680	650	430	390	-	273	4130	810	60	1667	200	290	-	163	80	70	200	117	-	-	-	-
Oligochaeta																								
Naididae																								
Chaetogaster diastrophus	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10	7	-	-	-	-	70	-	-	23
Allonias pectinata	10	-	-	3	-	-	-	-	10	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Pristina osborni	-	-	-	-	-	-	-	-	--	-	10	3	-	-	-	-	-	-	-	-	-	-	-	-
P. leidyi	-	-	50	17	-	-	-	-	10	-	-	3	-	10	-	3	-	-	-	-	-	-	-	-
P. sp.	40	30	150	73	60	10	-	23	80	-	10	30	90	50	40	60	-	-	-	-	-	-	-	-
Paranais sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	20	10	10	-	-	-	-	20	-	-	7
Tubificidae																								
Branchiura sowerbyi	60	130	-	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limnodrilus hoffmeisteri	90	-	40	43	360	10	-	123	230	80	10	107	-	-	-	-	-	-	-	-	-	-	-	-
Tubificidae spp.	170	650	1580	800	60	120	-	60	1350	780	10	713	90	50	30	57	-	-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	10	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1640	190	360	730
Enchytraeidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	60	20	47
Arthropoda																								
Crustacea																								
Amphipoda																								
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	10	690	263
Copepoda																								
Harpacticoida	390	-	240	210	-	-	-	-	320	560	120	333	-	-	-	-	-	10	-	3	-	-	740	247
Insecta																								
Odonata																								
Plathemis lydia	10	--	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ephmeroptera																								
Ephemerella invaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	50	180	107

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

APPENDIX E-1

April Ponar Densities

$(\#/m^2)$

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Stenonema rubrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	7
Pseudocloeon sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	10
Trichoptera																								
Hydroptilidae sp.	-	-	-	-	20	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neureclipsis sp.	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	3	-	-	-	-	-	-	-	-
Cheumatopsyche sp.																								
Megaloptera																								
Sialis sp.	-	10	-	3	10	10	-	7	10	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Tipulidae sp. (pupae)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	3	20	10	20	17
Culicidae																								
Chaoborus sp.	10	-	-	3	-	110	710	273	-	50	890	313	-	20	780	267	-	-	10	3	-	-	-	-
Chironomidae																								
Procladius sp.	-	-	60	20	10	120	-	43	20	50	80	50	-	-	30	10	-	-	-	-	-	-	-	-
Chironomus spp.	-	-	370	123	-	70	30	33	60	340	570	323	-	20	250	90	-	-	-	-	-	-	-	-
Dicrotendipes sp.	-	-	-	-	-	-	-	-	60	130	-	63	-	70	80	50	20	-	10	10	-	-	-	-
Cryptochironomus fulvus	-	-	80	27	30	60	-	30	60	50	-	37	-	-	-	-	-	-	-	-	-	-	-	-
Tribelos sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	590	230	-	270
Orthocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	690	2440	9810	4313
Cardiocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	510	1270	627
Psectrocladius sp. A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	130	1270	563
P. sp. B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	950	373
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	510	1900	870
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	630	263
Brillia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	-	-	63
Chironomidae (pupae)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260	87
Total Numbers of Organisms	1680	1230	3260	2058	1020	910	740	888	6350	2850	1660	3654	430	530	1230	730	110	90	230	142	4110	4530	18,200	8944
Total Numbers of Species	10	7	10	16	9	10	2	10	15	10	9	16	6	8	8	12	3	3	4	8	14	14	15	20
H' - Shannon Diversity Index				1.67				1.86				1.67				1.95				1.02				1.94

APPENDIX E-1

June Ponar Densities

$(3/m^2)$

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Cnidaria																								
Hydra americana	-	-	-	-	-	-	NS	-	-	130	-	43	-	-	-	-	-	NS	-	-	-	-	--	-
Turbellaria	-	-	-	-	-	10		5	-	-	-	-	-	-	-	-	-		-	-	-	-	-	--
Ectoprocta																								
Pectinella magnifica	-	-	-	-	*	*		*	**	*	*	*	-	-	--	-	-		-	-	-	-	-	-
Mollusca																								
Bivalvia																								
Corbicula manilensis	10	-	-	3	25	-		13	-	-	-	-	20	-	-	7	-		-	-	-	-	-	-
Juvenile Corbiculacea	-	40	10	17	40	430		235	-	-	-	-	260	-	-	87	330		400	365	-	70	-	23
Musculium sp.	-	-	-	-	-	-		-	-	-	-	-	-	10	-	3	-		30	15	110	-	-	37
Oligochaeta																								
Naididae																								
Nais variabilis	-	-	10	3	10	-		3	10	400	30	147	-	-	-	-	-		-	-	120	110	-	77
Pristina brevisita	10	-	-	3	-	-		-	-	180	-	60	10	-	--	3	-		-	-	-	-	10	3
P. osborni	20	-	-	7	-	-		-	-	-	-	-	-	30	--	10	-		-	-	20	-	-	7
Stylaria lacustris	-	-	-	-	-	-		-	-	-	10	3	-	-	-	-	-		-	-	-	-	-	-
S. fossularis	-	-	10	3	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Tubificidae spp.	300	200	1400	633	750	1740		1245	8090	1620	820	3510	570	210	-	277	-		-	-	3680	70	10	1253
Tubifex tubifex	-	-	-	-	-	-		-	170	-	-	57	-	-	-	-	-		-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-		-	-	-	--	-	-	-	-	-	-		-	-	150	70	-	73
Arthropoda																								
Crustacea																								
Ostracoda																								
Lymnocethere sp.	-	30	-	10	-	10		5	-	40	-	13	-	-	-	-	-		-	-	-	-	-	-
Amphipoda																								
Hyalella azteca	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	60	70	-	43
Copepoda																								
Cyclopoida	-	-	-	-	-	-		-	-	-	50	17	-	-	-	-	-		-	-	-	-	-	-
Arachnoidea																								
Hydrocarnia	-	-	-	-	-	-		-	-	-	10	3	-	-	-	-	-		-	-	-	-	-	-
Insecta																								
Megaloptera																								

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-1

June Ponar Densities

($\#/m^2$)

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Sialis sp.	-	-	-	-	-	-	NS	-	10	-	-	3	-	20	-	7	-	NS	-	-	--	-	-	-
Trichoptera																								
Neureclipsis sp.	-	-	-	-	10	-		5	-	270	-	90	-	-	-	-	--		-	-	-	-	-	-
Heliopsyche sp.	-	10	-	3	20	20		20	20	170		63	-	-	-	-	-		-	-	-	-	-	-
Hydropsyche sp.	-	-	-	-	-	-		-	-	10	-	3	-	-	-	-	-		-	-	-	-	-	--
Ochrotrichia sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	40	-	13
Diptera																								
Sciomyzidae																								
Dictya sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	10	-	-	3
Ceratopogonidae																								
Ceratoponinae	-	-	-	-	10	-		5	-	50	-	17	-	-	-	-	-		-	-	20	-	-	7
Culicidae																								
Chaoborus sp.	-	-	-	-	20	-		10	30	1440	2180	1217	10	890	770	557	-		-	-	20	40		20
Tipulidae																								
Tipula sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	150	-	50
Antocha sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	10	-	3
Chironomidae																								
Alabesmyia mallochi	40	--	-	13	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
A. sp	-	-	-	-	-	-		-	100	520	-	207	-	-	-	-	-		-	-	-	-	-	-
Procladius sp.	-	-	-	-	60	10		35	30	370	20	140	-	-	-	-	-		-	-	-	-	-	-
Conchapelopia sp.	-	-	-	-	-	-		-	-	470	-	157	-	40	-	13	-		-	-	-	-	-	-
Coelotanypus sp.	-	-	-	-	20	10		15	60	90	-	50	-	-	-	-	-		-	-	-	-	-	-
Eukiefferiella sp.	--	-	-	-	-	--		-	-	10	-	3	-	-	-	-	-		-	-	-	-	-	-
Brillia sp.	-	-	-	-	-	-		-	-	260	-	87	-	-	-	-	-		-	-	-	-	-	-
Psectrocladius sp. 1	10	-	-	3	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Cricotopus spp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	520	660	-	393
Chironomus sp.	10	-	-	3	10	-		5	-	-	100	33	-	10	-	3	-		-	-	30	-	-	10
Dricotendipes nervosus	-	-	-	-	-	-		-	-	-	30	10	-	-	-	-	-		-	-	-	-	-	
D. neomodestus	-	-	-	-	-	-		-	10	-	-	3	-	-	-	-	-		-	-	60			20
D. lobus	-	-	-	-	-	-		-	-	20	-	7	-	-	-	-	-		-	-	-	-	-	-
Glyptotendipes sp.	-	-	-	-	10	-		5	-	100	-	33	-	10	-	3	-		-	-	-	-	-	-
Goeldichironomus holoprasinus	10	-	-	3	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-		-

NS = Not sampled

APPENDIX E-1

June Ponar Densities

(#/m^2)

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Polypedium fallax	-	-	-	-	-	-	NS	-	110	-	-	38	-	-	-	-	-	NS	-	-	-	-	-	-
P. illinoense	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	--	190	-	-	63
Cryptochironomus fulvus	-	10	10	7	20	70		45	20	670	200	297	20	-	-	7	-		-	-	-	-	--	-
C. sp.	-	-	-	-	40	20		30	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Cryptotendipes sp.	-	-	-	-	-	-		-	-	220	240	153	-	-	-	-	-		-	-	-	-	-	-
Paralauterborniella sp.	-	10	-	3	-	-		-	-	370	-	123	-	-	-	-	-		-	-	-	-	-	-
Microspectra sp.	-	-	-	-	-	-		-	20	60	-	27	-	-	-	-	-		-	-	-	-	-	-
Rheotanytarus sp. A	-	-	-	-	20	20		20	-	1260	-	420	-	-	-	-	-		-	-	-	-	-	-
R. sp. B	-	-	-	-	-	-		-	-	1130	-	377	-	-	-	-	-		-	-	-	-	-	-
Chironomini sp.	-	-	-	-	-	-		-	10	2960	130	1033	-	-	-	-	-		-	-	-	-	-	-
Total Numbers of Organisms	410	300	1440	714	1065	2360		1071	9690	12820	3820	8424	890	1220	770	971	330		470	380	5020	1290	20	2098
Total Numbers of Species	8	6	5	15	15	10		18	14	25	12	36	6	8	1	11	1		2	2	13	10	2	18
H' - Shannon Diversity Index				0.64				0.99				2.18				1.18				0.17				1.60

NS = Not sampled

APPENDIX E-1

November Ponar Densities

$(\#/m^2)$

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Cnidaria																								
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	NS	-	10	-	NS	5
Turbellaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	10		5
Ectoprocta																								
Pectinella magnifica	-	-	-	-	-	*	*	*	*	*	-	*	-	*	*	*		-		-	-	-		-
Mollusca																								
Bivalvia																								
Corbicula manilensis	-	-	-	-	20	-	-	7	-	-	-	-	-	-	-	-		-		-	-	-		-
Juvenile Corbiculacea	470	50	20	180	4770	10	-	1593	-	20	-	7	320	20	-	113		-		-	-	-		-
Musculium sp.	40	30	-	23	20	-	-	7	-	-	-	-	-	30	-	10		-		-	-	50		25
Anodonta sp.	-	-	-	-	-	-	-	-	-	20	-	7	-	-	-	-		-		-	-	-		-
Gastropoda																								
Ferrissia rivularis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	10		5
Physa sp.	-	-	-	-	30	-	-	10	20	-	-	7	-	-	-	-		-		-	-	30		15
Oligochaeta																								
Naididae																								
...a Variabilis	-	-	30	10	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	10		5
Tubificidae	20	50	2780	950	-	180	1790	657	1080	460	30	390	170	10	900	360		-			-	9050		4025
Lumbriculidae	-	-	180	60	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	120		60
Arthropoda																								
Crustacea																								
Ostracoda																								
Lymnocethere sp.	10	10	-	7	40	-	-	13	40	-	-	13	10	-	-	3				-	-	-		-
Amphipoda																								
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	560		280
Decapoda																								
Palaemonetes paludosus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	20		10
Arachnoidea																								
Hydracarina	-	-	-	-	40	-	-	13	40	-	-	13	10	-	-	3		-		-	10	-		
Insecta																								
Odonata																								
Gomphidae sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-	-	10		5

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-1

November Ponar Densities

($\#/m^2$)

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Gomphus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	NS	-	-	10	NS	5
Ephemeroptera																								
Hexagenia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	10		5
Heterocleon sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	10		5
Stenonema rubrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	20		10
Megaloptera																								
Sialis sp.	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	3		-		-	-	-		-
Trichoptera																								
Neureclipsis sp.	-	-	-	-	10	-	-	3	10	-	10	7	20	20	30	23		-		-	-	-		-
Diptera																								
Ceratopogonidae																								
Ceratoponinae	30	-	-	10	-	10	-	3	10	-	-	3	-	-	-	-		-		-	-	-		-
Tipulidae																								
Antocha sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	160	-		80
Culicidae																								
Chaoborus sp.	-	10	110	40	-	2340	-	780	-	280	510	230	10	20	3000	1010		-		-	-	-		-
Chironomidae																								
Ablabesmyia sp.	-	-	-	-	40	-	-	13	-	10	-	3	-	-	-	-		-		-	-	-		-
Procladius sp.	-	40	-	13	-	10	-	3	40	-	40	27	-	20	30	17		-		-	-	-		-
Coelotanypus tricolor	-	-	-	-	-	180		60	-	-	-	-	-	-	-	-		-		-	-	-		-
Tanypus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	10		-		-	-	-		-
Chironomus sp.	-	-	-	-	-	640	-	213	-	380	10	190	-	20	80	33		-		-	-	-		-
Cryptochironomus fulvus	-	20	-	7	-	50	-	17	20	-	-	7	-	100	20	40		-		-	-	-		-
Dricotendipes nervosus	-	-	-	-	-	30	-	10	-		-		-	90	-	30		-		-	-	-		-
D. neomodestus	-	-	-	-	-	-	-	-	-	-	10	3	-	-	-	-		-		-	-	-		
D. lobus	-	-	-	-	-	-	-	-	-	140	-	47	-	-	-	-		-		-	-	-		-
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	10	260		130
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	40		20
Total Numbers of Organisms	570	210	3120	1340	4950	3450	1790	3389	1270	1610	610	941	550	330	4090	1642				0	180	9220		4695
Total Numbers of Species	5	7	5	10	8	9	1	16	8	7	6	15	7	9	7	14				0	3	16		18
H' - Shannon Diversity Index				1.00				1.20				1.64				1.26				-				0.68

NS = Not sampled

APPENDIX E-2

April Ponar Biomass

(g/m^2)

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	*	-	-	*	*	-	-	-	*
Ectoprocta																								
Pectinella magnifica																								
Mollusca																								
Bivalvia																								
Corbicula manilensis[a]	33.55	-	0.80	11.27	32.50	-	-	10.83	1.125	-	-	0.38	-	-	-	-	2.42	-	-	0.81	-	-	-	-
Juvenile Corbiculacea[b]	0.43	0.21	0.34	0.33	0.22	0.20	-	0.14	2.07	0.41	0.03	0.83	0.10	0.15	-	0.08	0.04	0.04	0.10	0.06	-	-	-	-
Oligochaeta																								
Naididae																								
Chaetogaster diastophus	-	-	-	-	-	-	-	-	-	-	-	-	.006	-	.006	.004	-	-	-	-	.042	-	-	-
Allonias pectinata	.006	-	-	.002	-	-	-	-	.006	-	-	.002	-	-	-	-	-	-	-	-	-	-	-	-
Pristina osborni	-	-	-	-	-	-	-	-	-	-	.006	.002	-	-	-	-	-	-	-	-	-	-	-	-
P. leidyi	-	-	.03	.01	-	-	-	-	.006	-	-	.002	-	.006	-	.002	-	-	-	-	-	-	-	-
P. sp.	.024	.018	.040	.044	.024	.008	-	.010	.032	-	.006	.013	.054	.030	.024	.036	-	-	-	-	-	-	-	-
Paranais sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	.012	.006	.006	-	-	-	-	.012	-	-	.004
Tubificidae																								
Branchiura sowerbyi	.246	.533	-	.260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limnodrilus hoffmeisteri	.364	-	.164	.176	1.476	.041	-	.506	.943	.328	.041	.437	-	-	-	-	-	-	-	-	-	-	-	-
Tubificidae spp.	.102	.390	.948	.480	.036	.072	-	.030	.810	.468	.006	.428	.054	.030	.018	.034	-	-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.1	4.7	9.2	18.72
Enchytraeidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.084	.084	.084	.065
Arthropoda																								
Crustacea																								
Amphipoda																								
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.180	.020	1.4	.527
Copepoda																								
Insecta																								
Odonata																								
Plathemis lydia	.224	-	-	.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ephemeroptera																								
Ephemerella invaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.459	.25	.918	.544

* Biomass estimated at less than 1 % of station total

a Wet weight - Shell not included

b Wet weight - Shell included

APPENDIX E-2

April Ponar Biomass

(g/m^2)

	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Stenonema rubrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.102	-	.034
Pseudocloeon sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.153	.051
Trichoptera																								
Hydroptilidae sp.	-	-	-	-	.071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neureclipsis sp.	-	-	-	-	-	-	-	-	-	-	-	-	.142	-	-	.047	-	-	-	-	-	-	-	-
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	.071	-	.024	-	-	-	-	-	-	-	-
Megaloptera																								
Sialis sp.	-	.392	-	.131	.392	.392	-	.261	.392	-	-	.131	-	-	-	-	-	-	-	-	-	-	-	-
Tipulidae sp. (pupae)																								
Culicidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.008	-	.003	.016	.008	.016	.013
Chaoborus sp.	.014	-	-	.005	-	.154	.994	.383	-	.070	1.25	.440	-	.028	.780	.269	-	-	.014	.005	-	-	-	-
Chironomidae																								
Procladius sp.	-	-	.048	.016	.008	.096	-	.033	.016	.040	.064	.040	-	-	.024	.008	-	-	-	-	-	-	-	-
Chironomus spp.	-	-	.296	.099	-	.056	.024	.027	.048	.272	.456	.259	-	.016	.200	.072	-	-	-	-	-	-	-	-
Dicrotendipes sp.	-	-	-	-	-	-	-	-	.048	.104	-	.051	.056	.064	.016	.045	.016	.008	.016	.013	-	-	-	-
Cryptochironomus fulvus	-	-	.064	.021	.024	.048	-	.024	.048	.040	-	.029	-	-	-	-	-	-	-	-	-	-	-	-
Tribelos sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.472	.182	-	.218
Orthocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.552	1.95	7.85	3.45
Cardiocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.008	.408	1.02	.477
Psectrocladius sp. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.232	.104	1.02	.451
P. sp. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.136	.760	.299
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.160	.408	1.52	.696
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.128	.504	.211
Brillia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.152	-	-	.051
Chironomidae (pupae)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.208	.069
Total Biomass	35.0	1.54	2.78	12.92	34.8	1.07	1.08	12.24	5.54	1.73	1.86	3.05	0.41	0.41	1.07	0.63	2.48	.06	.13	0.89	44.5	8.54	23.6	25.88

APPENDIX E-2

June Ponar Biomass

(g/m^2)

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Caidaria																								
Hydra americana	-	-	-	-	-	- *	NS	-	-	.260	-	.087	-	-	-	-	-	NS	-	-	-	-	-	-
Turbellaria																								
Ectoprocta																								
Pectinella magnifica																								
Mollusca																								
Bivalvia																								
Corbicula manilensis[a]	18.57	-	-	6.19	40.53	-		20.26	-	-	-	-	5.023	-	-	1.67	-		-	-	-	-	-	-
Juvenile Corbiculacea	-	.020	.005	.008	.020	.215		.118	-	-	-	-	.130	-	-	.043	.165		.200	.183	-	.032	-	.012
Musculium sp.[b]	-	-	-	-	-	-		-	-	-	-	-	-	.48	-	.160	-		.144	.720	5.28	-	-	1.76
Oligochaeta																								
Naididae																								
Nais variabilis	-	-	.006	.002	.006	-		.003	.006	.236	.018	.087	-	-	-	-	-		-	-	.071	.065	-	.045
Pristina brevisita	.006	-	-	.002	-	-		-	-	.110	-	.037	.006	-	-	.002	-		-	-	-	-	-	-
P. osborni	.012	-	-	.004	-	-		-	-	-	-	-	-	.018	-	.006	-		-	-	.012	-	-	.004
Stylaria lacustris	-	-	-	-	-	-		-	-	-	.006	.002	-	-	-	-	-		-	-	-	-	-	-
S. fossularis	-	-	.006	.002	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Tubificidae sp.	.420	.280	1.96	10.13	1.05	2.44		1.75	11.33	1.15	.798	4.43	.294	-	-	.098	-		-	-	5.15	.098	.01	1.75
Tubifex tubifex	-	-	-	-	-	-		-	.663	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	3.89	1.80	-	1.90
Arthropoda																								
Crustacea																								
Ostracoda																								
Limnocythere sp.	-	*	-	*	-	*		*	-	*	-	*	-	-	-	-	-		-	-	-	-	-	-
Amphipoda																								
Hyalella azteca	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	.120	.140	-	.087
Copepoda																								
Cyclopoida	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	-	-		-	-	-	-	-	-
Arachnoidea																								
Hydrocarnia	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	-	-		-	-	-	-	-	-

NS = Not sampled

* Biomass estimated at less than 1 % of station total

a Wet weight - Shell not included

b Wet weight - Shell included

APPENDIX E-2

June Ponar Biomass

(g/m^2)

TAXON	1 A	1 B	1 C	1 $\bar{X}$	3 A	3 B	3 C	3 $\bar{X}$	5 A	5 B	5 C	5 $\bar{X}$	7 A	7 B	7 C	7 $\bar{X}$	9 A	9 B	9 C	9 $\bar{X}$	12 A	12 B	12 C	12 $\bar{X}$
Insecta																								
Megaloptera																								
Sialis sp.	-	-	-	-	-	-	NS	-	.392	-	-	.131	-	.784	-	.261	-	NS	-	-	-	-	-	-
Trichoptera																								
Neureclipsis sp.	-	-	-	-	.038	-		.019	-	2.70	-	.90	-	-	-	-	-		-	-	-	-	-	-
Heliopsyche sp.	-	.014	-	.005	.028	.028		.028	.028	.238	-	.089	-	-	-	-	-		-	-	-	-	-	-
Hydropsyche sp.	-	-	-	-	-	-		-	-	.071	-	.024	-	-	-	-	-		-	-	-	-	-	-
Ochrotrichia sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	.056	-	.019
Diptera																								
Sciomyzidae																								
Dictya sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	.008	-	-	.003
Ceratopogonidae	-	-	-	-	.008	-		.004	-	.040	-	.013	-	-	-	-	-		-	-	-	-	-	-
Ceratoponinae																								
Culicidae																								
Chaoborus sp.	-	-	-	-	.011	-		.006	.016	.763	1.15	.645	.005	.472	.408	.296	-		-	-	.011	.021	-	.011
Tipulidae																								
Tipula sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	.120	-	.004
Antocha sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	.008	-	.003
Chironomidae																								
Alabesmyia mallochi	.032	-	-	.011	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
A. sp.	-	-	-	-	-	-		-	.080	.416	-	.165	-	-	-	-	-		-	-	-	-	-	-
Procladius sp.	-	-	-	-	.048	.008		.019	.024	.296	.016	.107	-	-	-	-	-		-	-	-	-	-	-
Conchapelopia sp.	-	-	-	-	-	-		-	-	.376	-	.125	-	.032	-	.011	-		-	-	-	-	-	-
Coelotanypus sp.	-	-	-	-	.016	.008		.012	.048	.072	-	.040	-	-	-	-	-		-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-		-	-	.008	-	.003	-	-	-	-	-		-	-	-	-	-	-
Brillia sp.	-	-	-	-	-	-		-	-	.208	-	.069	-	-	-	-	-		-	-	-	-	-	-
Psectrocladius sp.	.008	-	-	.003	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Cricotopus sp.	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	.416	.528	-	.315
Chironomus sp.	.008	-	-	.003	.008	-		.004	-	-	.080	.027	-	.008	-	.003	-		-	-	.024	-	-	.008
Dricotendipes nervosus	-	-	-	-	-	-		-	-	-	.024	.008	-	-	-	-	-		-	-	-	-	-	-
D. neomodestus	-	-	-	-	-	-		-	.008	-	-	.003	-	-	-	-	-		-	-	-	-	-	-
D. lobus	-	-	-	-	-	-		-	-	.016	-	.005	-	-	-	-	-		-	-	-	-	-	-

NS = Not sampled

APPENDIX E-2

June Ponar Biomass

(g/m^2)

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Glyptotendipes	-	-	-	-	.008	-		.004	-	.080	-	.026	-	-	-	-	-	NS	-	-	-	-	-	-
Goeldichironomus holoprasinus	.008	-	-	.003	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Polypedium fallax	-	-	-	-	-	-		-	.088	-	-	.029	-	-	-	-	-		-	-	-	-	-	-
P. illinoense	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	.152	-	-	.051
Cryptochironomus fulvus	-	.008	.008	.053	.016	.065		.027	.016	.536	.160	.712	.016	-	-	.053	-		-	-	-	-	-	-
C. sp.	-	-	-	-	.032	.016		.024	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Cryptotendipes sp.	-	-	-	-	-	-		-	-	.176	.192	.123	-	-	-	-	-		-	-	-	-	-	-
Paralauterborniella sp.	-	.008	-	.003	-	-		-	-	.296	-	.099	-	-	-	-	-		-	-	-	-	-	-
Microspectra sp.	-	-	-	-	-	-		-	.016	.048	-	.021	-	-	-	-	-		-	-	-	-	-	-
Rheotanytarsus sp. A	-	-	-	-	.016	.016		.016	-	1.008	-	.336	-	-	-	-	-		-	-	-	-	-	-
R. sp. B	-	-	-	-	-	-		-	-	.904	-	.301	-	-	-	-	-		-	-	-	-	-	-
Chironomini sp.	-	-	-	-	-	-		-	.008	2.368	.104	.804	-	-	-	-	-		-	-	-	-	-	-
Total Biomass	19.2	0.32	1.99	16.43	42.2	2.80		25.5	28.7	11.47	2.55	9.35	5.47	1.79	0.41	2.60	0.71		1.64	.90	20.3	2.9	0.02	6.78

NS = Not sampled

APPENDIX E-2

November Ponar Biomass

(g/m^2)

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Cnidaria																								
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	NS	-	.02	-	NS	.01
Turbellaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.03		.01
Ectoprocta																								
Pectinella magnifica																								
Mollusca																								
Bivalvia																								
Corbicula manilensis [a]	-	-	-	-	5.63	-	-	1.87	-	-	-	-	-	-	-	-		-		-	-	-		-
Juvenile Corbiculacea	.270	.029	.011	.103	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	-		-
Musculium sp. [b]	1.94	1.44	-	1.13	0.96	-	-	0.32	-	-	-	-	-	1.44	-	.48		-		-	-	2.40		1.20
Anodonta sp. [b]	-	-	-	-	-	-	-	-	-	0.96	-	.48	-	-	-	-		-		-	-	-		-
Gastropoda																								
Ferrissia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.059		.030
Physa sp.	-	-	-	-	.897	-	-	.299	.598	-	-	.199	-	-	-	-		-		-	-	.897		.449
Oligochaeta																								
Naididae																								
Nais variabilis	-	-	.018	.006	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.059		.030
Tubificidae	.026	.056	3.61	1.23	-	.234	2.32	.854	1.40	.598	.039	.680	.221	.013	1.17	.468		-		-	-	10.465		5.233
Lumbriculidae	-	-	.288	.096	-	-	-	-	-	-	-													
Arthropoda																								
Crustacea																								
Ostracoda																								
Lymnocethere sp.	*	*		*	*	-	-	*	*	-	-	*	*	-	-	*		-		-	-	-		-
Amphipoda																								
Hyalella azteca	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.112		.056
Decapoda																								
Palaemonetes paludosus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.134		-
Arachnoidea																								
Hydracarnia	-	-		-	*	-	-	*	*	-	-	*	*	-	-	*		-		-	*	-		*
Insecta																								
Odonata																								
Gomphidae sp.	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.128		-

NS = Not sampled

* Biomass estimated at less than 1 % of station total

a Wet weight - Shell not included

b Wet weight - Shell included

APPENDIX E-2

November Ponar Biomass

(g/m^2)

TAXON	1				3				5				7				9				12			
	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Gomphus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	NS	-	-	10.15	NS	5.075
Ephemeroptera																								
Hexagenia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.464		.232
Heterocloeon sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.051		.026
Stenonema rubrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.100		.050
Megaloptera																								
Sialis sp.	-	-	-	-	-	-	-	-	-	-	-	-	.392	-	-	.131		-		-	-	-		-
Trichoptera																								
Neureclipsis sp.	-	-	-	-	.038	-	-	.013	.038	-	.038	.026	.076	.076	.114	.089		-		-	-	-		-
Diptera																								
Ceratopogonidae																								
Ceratopogoninae	.021	-	-	.007	-	.007	-	.002	.007	-	-	.002	-	-	-	-		-		-	-	-		-
Tipulidae																								
Antocha sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	.160	-		.080
Culicidae																								
Chaoborus sp.	-	.005	.058	.021	-	1.24	-	.413	-	.148	.270	.122	.005	.011	1.59	.535		-		-	-	-		-
Chironomidae																								
Ablabesmyia sp.	-	-	-	-	.032	-	-	.010	-	.008	-	.002	-	-	-	-		-		-	-	-		-
Procladius sp.	-	.032	-	.010	-	.010	-	.002	.032	-	.032	.022	-	.016	.024	.014		-		-	-	-		-
Clinotanypus tricolor	-	-	-	-	-	.144	-	.048	-	-	-	-	-	-	-	-		-		-	-	-		-
Tanypus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.024	.008		-		-	-	-		-
Chironomus sp.	-	-	-	-	-	.512	-	.170	-	.304	.008	.152	-	.016	.064	.026		-		-	-	-		-
Cryptochironomus fulvus	-	.016	-	.006	-	.040	-	.014	.016	-	-	.006	-	.080	.016	.032		-		-	-			-
Dicrotendipes nervosus	-	-	-	-	-	.024	-	.008	-	.112	-	.038	-	.072	-	.024		-		-	-	-		-
D. neomodestus	-	-	-	-	-	-	-	-	-	-	.008	.002	-	-	-	-		-		-	-	-		-
D. lobus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	-		-
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	.008	.208		104
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	.032		.016
Total Biomass	1.96	1.58	3.99	2.63	7.56	2.21	2.33	4.02	2.10	2.13	0.40	1.93	0.70	1.72	2.98	1.81		0		0	0.19	25.48		12.70

NS = Not sampled

APPENDIX E-3

April Hester-Dendy Densities

($\#/m^2$)

TAXON	1 Shallow A	1 Shallow B	1 Shallow C	1 Mid A	1 Mid B	1 Mid C	1 Deep A	1 Deep B	1 Deep C	1 $\bar{X}$	3 Shallow A	3 Shallow B	3 Shallow C	3 Mid A	3 Mid B	3 Mid C	3 Deep A	3 Deep B	3 Deep C	3 $\bar{X}$
Cnidaria																				
Hydra americana	-	-	-	-	-	20	NS	NS	NS	3	-	-	-	-	-	-	NS	NS	NS	-
Nematoda	-	-	-	20	-	-				5	-	20	-	20	-	-				7
Ectoprocta																				
Pectinella magnifica	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Mollusca																				
Lymnaea columella	-	20	-	-	-	-				3	-	-	-	-	-	-				-
Oligochaeta																				
Pristina brevisita	-	-	-	39	-	-				7	-	-	-	-	-	-				-
P. aequista	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Nais variabilis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	1172	98	430	508	820	371				567	1582	1719	1465	684	1035	1420				1318
Chydorus sphaericus	-	-	-	-	-	-				-	-	20	-	-	-	39				10
Alona guttata	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. quadrangularis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. affinis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. costata	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Leydigia acanthocercoides	39	-	-	-	-	-				7	-	-	-	-	20	-				3
Ilyocryptus spinifer	-	-	-	-	-	-				-	-	-	-	-	-	-				-
I. sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Copepoda																				
Cyclopoida	98	39	39	0	130	20				56	39	117	-	20	117	59				59
Harpacticoida	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Insecta																				
Trichoptera																				
Cheumatopsyche sp.	-	-	20	-	-	-				3	-	-	-	-	-	-				-

NS = Not sampled

APPENDIX E-3

April Hester-Dendy Densities

$(\#/m^2)$

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Diptera																				
Chironomidae																				
Chironomus sp.	-	-	20	-	-	-	NS	NS	NS	3	-	-	-	-	-	-	NS	NS	NS	-
Cricotopus sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Pentaneurini sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Total Number of Organisms	1309	1466	509	573	957	411				654	1621	1876	1465	724	1172	1524				1397
Total Number of Species	3	3	4	3	2	3				9	2	4	1	3	3	3				5
H'- Shannon Diversity Index										0.57										0.26

NS = Not sampled

APPENDIX E-3

April Hester-Dendy Densities

($\#/m^2$)

TAXON	5 Shallow A	5 Shallow B	5 Shallow C	5 Mid A	5 Mid B	5 Mid C	5 Deep A	5 Deep B	5 Deep C	5 $\bar{X}$	7 Shallow A	7 Shallow B	7 Shallow C	7 Mid A	7 Mid B	7 Mid C	7 Deep A	7 Deep B	7 Deep C	7 $\bar{X}$
Cnidaria																				
Hydra americana	-	20	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ectoprocta																				
Pectinella magnifica	-	-	-	39	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
Mollusca																				
Lymnaea magnifica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oligochaeta																				
Fristina brevisita	176	234	59	98	137	312	273	195	117	178	137	117	117	20	39	-	117	39	59	72
P. aequista	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nais variabilis	-	-	-	39	39	98	-	-	-	59	-	-	-	-	-	-	-	-	-	-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	195	371	566	39	117	117	-	-	-	156	117	195	176	117	39	-	-	-	-	72
Chydorus sphaericus	20	-	59	-	-	20	-	-	-	9	-	-	-	-	-	-	-	-	-	-
Alona guttata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. quadrangularis	-	-	15	82	44	111	141	119	30	60	39	-	-	-	-	-	-	-	-	4
A. affinis	-	-	17	93	50	126	160	134	34	68	-	-	-	20	-	-	-	-	-	2
A. costata	-	-	8	45	23	59	74	62	16	32	-	-	-	-	-	-	-	-	-	-
Leydigia acanthocercoides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ilyocryptus spinifer	-	-	-	-	-	20	20	20	-	7	-	-	-	-	-	-	-	-	-	-
I. sp.	-	-	-	-	-	-	-	20	20	4	-	-	-	-	-	-	-	-	-	-
Copepoda																				
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-	39	59	-	59	-	20	59	-	26
Harpacticoida	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	2
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insecta																				
Trichoptera																				
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX E-3

April Hester-Dendy Densities

($\#/m^2$)

	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
TAXON	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Diptera																				
Chironomidae																				
Chironomus sp.	-	-	-	20	-	20	-	-	-	4	-	-	-	20	-	-	-	-	-	2
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentaneurini sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Number of Organisms	391	625	724	455	410	883	668	550	217	583	293	371	352	177	137	0	137	98	59	180
Total Number of Species	3	3	6	8	6	9	5	7	5	12	3	4	3	4	3	0	2	2	1	7
H'- Shannon Diversity Index										1.83										1.25

APPENDIX E-3

April Hester-Dendy Densities

($\#/m^2$)

TAXON	9										12			
	Shallow			Mid			Deep							
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Cnidaria														
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ectoprocta														
Pectinella magnifica	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mollusca														
Lymnaea magnifica	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oligochaeta														
Pristina brevisita	-	-	-	-	-	-	-	-	-	-	-	20	-	6
P. aequiseta	-	-	-	-	-	-	-	-	-	-	20	-	-	6
Nais variabilis	-	-	-	-	-	-	-	-	-	-	20	-	-	6
Arthropoda														
Crustacea														
Cladocera														
Sida crystallina	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chydorus sphaericus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alona guttata	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. quadrangularis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. affinis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. costata	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leydigia acanthocercoides	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ilyocryptus spinifer	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I. sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpacticoida	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda														
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insecta														
Trichoptera														
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	20	-	6

APPENDIX E-3

April Hester-Dendy Densities

(#/m^2)

TAXON	9 Shallow A	B	C	Mid A	B	C	Deep A	B	C	$\bar{X}$	12 A	B	C	$\bar{X}$
Diptera														
Chironomidae														
Chironomus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	352	449	488	430
Pentaneurini sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Number of Organisms	0	0	0	0	0	0	0	0	0	0	392	489	488	454
Total Number of Species	0	0	0	0	0	0	0	0	0	0	3	3	1	5
H'- Shannon Diversity Index										-				0.28

APPENDIX E-3

June Hester-Dendy Densities

($\#/m^2$)

TAXON	1							3							5						
	Shallow		Mid		Deep			Shallow		Mid		Deep			Shallow		Mid		Deep		
	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$
Cnidaria																					
Hydra americana	-	-	-	-	-	-	-	39	78	2656	1758	NS	NS	1133	78	117	-	-	-	-	33
Turbellaria	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Ectoprocta																					
Pectinella magnifica	-	-	-	-	-	-	-	-	-	-	-			-	*	-	-	-	-	-	*
Mollusca																					
Bivalvia																					
Juvenile Corbiculacea	-	-	-	-	-	-	-	78	20	-	-			24.5	-	-	-	-	-	-	-
Gastropoda																					
Ferrissia rivularis	-	39	508	332	20	-	150	-	-	-	-			-	-	-	-	-	-	-	-
Lymnaea columella	586	1055	-	-	-	-	273	-	-	-	-			-	-	-	-	-	-	-	-
Oligochaeta																					
Naididae																					
Nais variabilis	449	605	332	488	98	20	332	1992	2305	1016	2363			1919	4082	3524	-	59	20	117	1309
Pristina brevisita	78	-	78	59	-	-	36	-	-	117	-			-	-	-	-	-	-	-	-
P. longesita	-	-	-	-	-	-	-	781	195	-	-			-	20	59	-	-	-	-	-
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Chaetogaster setosa	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Enchytraeidae	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Arthropoda																					
Crustacea																					
Cladocera																					
Sida crystallina	-	-	-	-	20	-	3	-	-	-	-			-	20	59	-	-	-	-	13
Ilyocryptus spinifer	-	-	-	-	-	-	-	20	20	20	-			15	-	-	-	-	-	-	-
Ostracoda																					
Lymnocythere sp.	-	-	-	-	-	-	-	78	59	39	117			73	-	-	-	-	-	-	-
Copepoda																					
Harpacticoida	-	-	-	-	20	-	3	-	-	-	-			-	-	-	-	-	-	-	-
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Amphipoda																					
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	*-			-	-	-	-	-	-	-	-
Decapoda																					
Procambarus speculifer	-	-	-	-	-	-	-	20	-	-	-			5	-	-	-	-	-	-	-

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-3

June Hester-Dendy Densities

($\#/m^2$)

TAXON	1							3							5						
	Shallow		Mid		Deep			Shallow		Mid		Deep			Shallow		Mid		Deep		
	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$
Arachnoidea																					
Hydracarnia	-	-	-	-	-	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-
Insecta																					
Ephemeroptera																					
Ephemerella invaria	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
E. sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Stenacron interpuntatum	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Trichoptera																					
Polycentropus sp.	78	20	-	-	-	-	16	-	-	-	-			-	-	-	-	-	-	-	-
Neureclipsis sp.	-	-	-	-	-	-	-	508	352	430	527			454	605	508	20	-	-	391	254
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Coleoptera																					
Elmidae																					
Dubiraphia sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Diptera																					
Tipulidae (pupae)	-	-	39	-	-	-	7	20	20	-	-			10	-	-	-	-	-	-	-
Chironomidae																					
Procladius sp.	-	-	-	-	39	59	16	-	-	-	-			-	-	-	-	-	-	-	-
Ablabesmyia sp.	-	-	-	-	-	-	-	20	-	59	-			20	-	-	-	-	-	-	-
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Chironomus sp.	-	-	20	-	20	-	7	-	-	-	-			-	-	-	-	-	-	-	-
Dricotendipes nervosus	20	20	78	39	20	-	30	584	957	1641	1777			1265	2552	1875	39	-	39	78	765
D. neomodestus	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
D. sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Einfeldia sp.	-	-	-	-	-	-	-	-	-	-	-			-	-		-	-	-	-	-
Glyptotendipes sp.	20	-	-	-	-	-	3	-	-	-	-			-	-	-	-	-	-	-	-
Psectrocladius sp.	-	-	-	-	39	20	10	195	39	-	-			59	-	-	-	-	-	-	-
Rheotanytarsus sp. A	39	20	-	20	-	-	13	-	-	-	-			-	-	-	-	-	-	-	-
R. sp. B	-	-	-	-	-	20	3	59	-	-	-			15	78	20	-	-	-	-	[illegible]
R. sp. C	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Tribelos fusicornis	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Orthocladius sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-			-	-		-	-	-	-	-

NS = Not sampled

APPENDIX E-3

June Hester-Dendy Densities

$(\#/m^2)$

TAXON	1							3							5						
	Shallow		Mid		Deep			Shallow		Mid		Deep			Shallow		Mid		Deep		
	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-
Potthastia longimanus	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Polypedium convictum	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Total Numbers of Organisms	1270	1759	1055	938	276	119	902	4394	4045	5978	6542			4993	7435	6162	59	59	59	586	2381
Total Numbers of Species	7	6	6	5	8	4	15	13	10	8	5			12	7	7	2	1	2	3	6
H' - Shannon Diversity Index							1.69							1.61							0.95

NS = Not sampled

APPENDIX E-3

June Hester-Dendy Densities

($\#/m^2$)

	7							9							12		
	Shallow		Mid		Deep			Shallow		Mid		Deep					
TAXON	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	$\bar{X}$
Cnidaria																	
Hydra americana	-	39	-	-	-	-	6.5	NS	NS	NS	NS	NS	NS		-	-	-
Turbel'aria	-	39	-	-	-	-	7								20	-	10
Ectoprocta																	
Pectinella magnifica	-	*	-	-	-	-	*								-	-	-
Mollusca																	
Bivalvia																	
Juvenile Corbiculacea	-	-	-	-	-	-	-								-	-	-
Gastropoda																	
Ferrissia rivularis	-	-	-	-	-	-	-								-	-	-
Lymnaea columella	-	-	-	-	-	-	-								39		20
Oligochaeta																	
Naididae																	
ais variabilis	4707	4961	2190	7246	176	20	3337								13,710	6171	9941
ristina brevisita	-	-	-	-	-	-	-								-	-	-
P. longesita	1348	1562	137	-	-	-	508								-		-
tylaria lacustris	-	-	-	-	-	-	-								78	312	195
Chaetogaster setosa	-	-	-	-	-	-	-								254	-	127
Lumbriculidae	-	-	-	-	-	-	-								20	-	10
Enchytraeidae	-	-	-	-	-	-	-								-	644	322
Arthropoda																	
Crustacea																	
Cladocera																	
ida crystallina	78	20	39	-	20	-	26								-	-	-
Ilyocryptus spinifer	-	-	-	-	-	-	-								-	-	-
Ostracoda																	
Lymnocythere sp.	-	-	-	-	-	-	-								-	-	-
Copepoda																	
Harpacticoida	-	-	-	-	-	-	-								-	-	-
Cyclopoida	98	78	39	78	-	-	49								-	-	-
Amphipoda																	
Hyalella azteca	-	-	-	-	-	-	-								156	59	108
Decapoda																	
Procambarus speculifer	-	-	-	-	-	-	-								-	-	-

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-3

June Hester-Dendy Densities

($\#/m^2$)

TAXON	7 Shallow A	7 Shallow B	7 Mid A	7 Mid B	7 Deep A	7 Deep B	7 X̄	9 Shallow A	9 Shallow B	9 Mid A	9 Mid B	9 Deep A	9 Deep B	9 X̄	12 A	12 B	12 X̄
Arachnoidae																	
Hydracarnia	-	-	-	-	-	-	-	NS	NS	NS	NS	NS	NS		20	20	20
Insecta																	
Emphemroptera																	
Ephemerella invaria	-	-	-	-	-	-	-								39	-	20
E. sp.	-	-	-	-	-	-	-								-	20	10
Stenacron interpuntatum	-	-	-	-	-	-	-								-	39	20
Trichoptera																	
Polycentropus sp.	-	-	-	-	-	-	-								-	-	-
Neureclipsis sp.	176	-	-	-	-	-	-								-	-	-
Cheumatopsyche sp.	-	-	-	-	-	-	-								-	176	88
Coleoptera																	
Elmidae																	
Dubiraphia sp.	-	-	-	-	-	-	-								59	39	49
Diptera																	
Tipulidae (pupae)	-	-	-	-	-	-	-								-	-	-
Chironomidae																	
Procladius sp.	-	-	39	-	-	-	7								-	-	-
Ablabesmyia sp.	-	-	-	-	-	-	-								-	-	-
Cricotopus sp.	-	-	-	-	-	-	-								1348	1055	1201
Chironomus sp.	-	-	195	-	-	-	33								-	-	-
Dricotendipes nervosus	1367	899	234	117	-	-	436								-	-	-
D. neomodestus	-	-	-	20	-	-	3								-	-	-
D. sp.	-	-	-	195	-	20	34								-	-	-
Einfeldia sp.	-	-	-	20	-	-	3								-	-	-
Glyptotendipes sp.	-	59	-	-	-	-	7								-	-	-
Psectrocladius sp.	-	-	20	-	20	-	7								-	-	-
Rheotanytarus sp. A	-	-	-	-	-	-	-								-	-	-
R. sp. B	-	20	-	-	-	-	3								-	98	49
R. sp. C	-	-	-	-	-	-	-								-	20	10
Tribelos fusicornis	-	20	195	-	-	-	34								-	-	-
Orthocladius sp.	-	-	-	-	-	-	-								1309	1367	1338
Eukiefferiella sp.	-	-	-	-	-	-	-								39	-	20

NS = Not sampled

APPENDIX E-3

June Hester-Dendy Densities

(#/m^2)

TAXON	7 Shallow A	B	Mid A	B	Deep A	B	X̄	9 Shallow A	B	Mid A	B	Deep A	B	X̄	12 A	B	X̄
Thienemanniella sp.	-	-	-	-	-	-	-	NS	NS	NS	NS	NS	NS		-	117	59
Potthatia longimanus	-	-	-	-	-	-	-								20	59	40
Polypedium convictum	-	-	-	-	-	-	-								-	59	30
Total Numbers of Organisms	7774	7697	3088	7676	216	40	4501							-	17,091	10,020	13,367
Total Numbers of Species	6	10	9	6	3	2	16							-	13	16	22
H' - Shannon Diversity Index							0.98							-			1.09

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

($\#/m^2$)

TAXON	1 Shallow A	1 Shallow B	1 Shallow C	1 Mid A	1 Mid B	1 Mid C	1 Deep A	1 Deep B	1 Deep C	1 $\bar{X}$
Cnidaria										
Hydra americana	-	-	-	-	-	-	20	-	-	2.2
Turbellaria	20	-	39	-	-	-	-	-	-	6.6
Ectoprocta										
Pectinella magnifica	-	-	-	-	-	-	-	-	-	-
Mollusca										
Bivalvia										
Juvenile Corbiculacea	-	-	-	-	-	-	-	39	-	4.4
Musculium sp.	-	-	20	20	-	-	-	-	-	4.4
Gastropoda										
Lymnaea columella	-	-	-	-	-	-	-	-	-	-
Oligochaeta										
Naididae										
Nais variabilis	78	98	78	176	273	98	137	117	488	171.4
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-
Pristina breviseta	-	-	-	-	-	-	-	-	-	-
Tubificidae	-	-	-	-	-	-	39	-	-	4.4
Lumbriculidae	-	-	-	-	-	-	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sida crystallina	59	78	254	1914	1400	2095	195	39	234	763.8
Ilyocryptus spinifer	-	-	-	-	-	-	-	-	-	-
Ostracoda										
Lymnocythere sp.	20	20	78	39	39	59	-	-	39	32.7
Amphipoda										
Hyalella azteca	-	-	-	-	-	-	-	-	-	-
Arachnoidea										
Hydracarnia	-	-	-	-	-	-	-	-	-	-
Insecta										
Odonata										
Nehalleria sp.	20	-	-	-	-	-	-	-	-	2.2
Cordulegaster sp.	-	-	-	20	-	-	-	-	-	2.2

TAXON	3 Shallow A	3 Shallow B	3 Shallow C	3 Mid A	3 Mid B	3 Mid C	3 Deep A	3 Deep B	3 Deep C	3 $\bar{X}$
Cnidaria										
Hydra americana	-	59	-	-	-	-	176	-	-	26.1
Turbellaria	-	20	-	-	-	-	-	-	-	2.2
Ectoprocta										
Pectinella magnifica	-	-	-	-	-	-	-	-	*	*
Mollusca										
Bivalvia										
Juvenile Corbiculacea	-	-	-	-	-	-	-	-	-	-
Musculium sp.	-	-	-	-	-	-	-	-	-	-
Gastropoda										
Lymnaea columella	-	-	-	-	-	-	-	-	-	-
Oligochaeta										
Naididae										
Nais variabilis	59	-	117	78	-	78	215	78	859	164.9
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-
Pristina breviseta	-	-	20	-	-	20	-	-	-	4.4
Tubificidae	20	-	-	-	-	-	-	-	-	2.2
Lumbriculidae	-	-	-	-	-	-	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sida crystallina	98	-	586	1719	1933	1953	2480	2812	1133	1412.7
Ilyocryptus spinifer	-	-	20	-	20	-	-	-	-	4.4
Ostracoda										
Lymnocythere sp.	20	39	542	195	352	117	20	59	20	152.1
Amphipoda										
Hyalella azteca	-	-	-	-	-	-	-	-	-	-
Arachnoidea										
Hydracarnia	-	-	-	-	-	-	-	-	-	-
Insecta										
Odonata										
Nehalleria sp.	-	-	-	-	-	-	-	-	-	-
Cordulegaster sp.	-	-	-	-	-	-	-	-	-	-

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

APPENDIX E-3

November Hester-Dendy Densities

$(\#/m^2)$

TAXON	1 Shallow A	1 Shallow B	1 Shallow C	1 Mid A	1 Mid B	1 Mid C	1 Deep A	1 Deep B	1 Deep C	1 $\bar{X}$	3 Shallow A	3 Shallow B	3 Shallow C	3 Mid A	3 Mid B	3 Mid C	3 Deep A	3 Deep B	3 Deep C	3 $\bar{X}$
Ephemeroptera																				
Stenacron interpunctatum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichoptera																				
Neureclipsis sp.	78	20	39	176	195	39	-	-	-	60.8	410	547	391	352	469	410	156	39	215	332.1
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helicopsyche borealis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plecoptera																				
Pteronarcys sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diptera																				
Stratiomyiidae																				
Odontomyia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tipulidae sp. (pupae)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ceratopogonidae																				
Ceratopogoninae	-	-	20	-	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-
Chironomidae																				
Procladius sp.	-	20	-	-	-	-	-	-	-	2.2	-	-	-	-	20	20	-	-	20	6.7
Ablabesmyia sp.	-	20	-	-	-	-	-	-	-	2.2	-	39	-	-	-	20	-	-	-	6.6
Pentaneurini spp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	-	4.4
Chironomus spp.	-	-	20	20	20	59	195	20	138	52.4	20	-	-	-	-	-	39	-	59	13.1
Cryptochironomus fulvus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. sp.	-	-	-	-	-	-	-	-	20	2.2	-	-	-	-	-	-	-	-	-	-
Einfeldia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glyptotendipes senilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	-	6.6
G. sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	-	-	-	10.9
Dicrotendipes nervosus	59	-	-	20	39	20	20	-	-	17.6	332	430	254	684	293	391	1094	801	625	544.9
D. neomodestus	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	-	20	-	-	6.6
D. lobus	-	39	-	-	-	-	-	-	39	8.7	59	293	39	469	-	-	117	59	20	117.3
D. sp.	-	-	-	39	20	-	-	-	-	6.6	449	59	469	98	1074	879	684	1172	84	552
Tribelos fusicornis	-	-	-	-	-	-	-	-	-	-	-	20	-	-	215	20	488	20	20	87
Goeldichironomus holoprasinus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microtendipes sp.	-	-	-	-	-	-	-	-	-	-	-	-	20	117	-	-	-	-	-	15.2

APPENDIX E-3

November Hester-Dendy Densities

(#/m^2)

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cricotopus sp.	-	-	-	-	-	20	-	-	-	2.2	-	-	-	-	-	-	-	-	20	2.2
Rheotanytarsus sp.	59	-	20	98	20	137	-	-	20	39.3	-	20	-	20	-	-	20	-	39	11.0
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	-	13.0
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichocladius sp.	-	-	-	20	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-
Chironomidae pupae	-	-	20	39	-	20	-	-	-	8.8	-	-	-	-	-	-	-	-	-	-
Total Numbers of Organisms	357	295	588	2581	2006	2547	606	215	978	1204	1467	1565	2458	2732	4415	3996	5489	5099	3114	3499
Total Numbers of Species	8	7	8	12	8	9	6	4	6	23	9	11	10	9	9	11	13	9	12	23
H' - Shannon Diversity Index										1.24										1.88

APPENDIX E-3

November Hester-Dendy Densities

(#/m^2)

TAXON	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cnidaria																				
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	-	-	-	-	-	-
Turbellaria	-	-	-	-	-	-	-	-	-	-	-	-		215	156	176	-	-	-	68.4
Ectoprocta																				
Pectinella magnifica	*	-	-	-	*	*	-	-	-	*	-	-		*	-	*	*	-	-	*
Mollusca																				
Bivalvia																				
Juvenile Corbiculacea	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Musculium sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Gastropoda																				
Lymnaea columella	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Oligochaeta																				
Naididae																				
Nais variabilis	117	195	117	59	39	20	20	78	-	60.6	254	39		3432	781	664	5390	4199	3222	2247.6
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Pristina breviseta	39	-	20	-	-	-	-	-	-	6.6	-	-		-	-	20	-	-	-	2.5
Tubificidae	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	391	1894	3379	1601	1328	879	391	8222	8652	2794.7	117	410		117	78	488	6660	7168	7949	2873.4
Ilyocryptus spinifer	195	-	254	-	39	20	156	156	39	95.4	39	34		-		-	20	-	39	17.1
Ostracoda																				
Lymnocythere sp.	39	20	59	-	-	-	59	-	-	19.7	59	59		-	-	-	-	-	-	14.8
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Arachnoidea																				
Hydracarnia	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Insecta																				
Odonata																				
Nehallenia sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Cordulegaster sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

$(\#/m^2)$

TAXON	5 Shallow A	5 Shallow B	5 Shallow C	5 Mid A	5 Mid B	5 Mid C	5 Deep A	5 Deep B	5 Deep C	5 $\bar{X}$	7 Shallow A	7 Shallow B	7 Shallow C	7 Mid A	7 Mid B	7 Mid C	7 Deep A	7 Deep B	7 Deep C	7 $\bar{X}$
Ephemeroptera																				
Stenacron interpunctatum	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	-	-	-	-	-	-
Trichoptera																				
Neureclipsis sp.	772	430	352	195	332	293	98	215	195	314.7	39	117			20	-	-	-	-	24.5
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Helicopsyche borealis	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Plecoptera																				
Pteronarcys sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Diptera																				
Stratiomyiidae																				
Odontomyia sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Tipulidae sp. (pupae)	-	-	-	-	-	-	20	-	20	4.4	-	-		-	-	-	-	-	-	-
Ceratopogonidae																				
Ceratopoginae	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Chironomidae																				
Procladius sp.	-	-	-	-	20	-	-	-	-	2.2	-	-		-	-	-	-	-	-	-
Ablabesmyia sp.	-	-	20	-	-	20	-	20	-	6.7	-	-		-	-	-	-	-	-	-
Pentaneurini spp.	20	-	-	39	20	78	-	-	20	19.7	-	-		-	-	20	-	-	-	2.5
Chironomus spp.	117	20	-	78	117	117	98	78	59	76	20	-		20	20	20	-	20	-	12.5
Cryptochironomus fulvus	20	-	39	-	-	-	-	-	-	6.6	-	-		-	-	-	-	20	-	2.5
C. sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Einfeldia sp.	-	-	-	-	-	176	-	-	-	19.6	-	-		-	-	-	-	-	-	-
Glyptotendipes senilis	-	59	59	78	137	117	137	-	-	58.7	98	410		78	78	78	20	-	-	97.8
G. sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Dicrotendipes nervosus	215	254	254	723	781	195	723	371	312	425.3	195	215		527	234	312	254	332	156	27[illegible]
D. neomodestus	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
D. lobus	-	39	-	59	59	59	-	-	59	24.0	-	-		-	-	-	-	-	-	-
D. sp.	996	1333	1094	1269	1797	937	1973	1894	1621	1434.9	898	1523		449	273	156	39	98	59	436.9
Tribelos fusicornis	-	-	-	-	20	-	-	-	-	2.2	39	78		117	117	117	20	78	-	85.4
Goeldichironomus holoprasinus	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Microtendipes sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

($\#/m^2$)

TAXON	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	-	-	-	-	-	-
Rheotanytarsus sp.	20	59	117	20	39	-	-	-	-	46.1	98	39		-	39	-	20	-	-	20.8
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Trichocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Chironomidae pupae	-	-	-	20	39	59	-	59	-	19.7	39	-		20	-	-	20	-	20	12.4
Total Numbers of Organisms	2941	4303	5764	4141	4767	2970	3675	11,093	2286	5438	1895	2924		4975	1796	2051	12,423	11,915	11,445	6197
Total Numbers of Species	12	10	12	11	14	13	10	9	9	20	12	10		9	10	10	9	7	5	16
H' - Shannon Diversity Index										1.48										1.33

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

($\#/m^2$)

TAXON	9										12									
	Shallow			Mid			Deep													
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	D	E	F	G	H	I	$\bar{X}$
Cnidaria																				
Hydra americana	-	-	NS	NS	NS	NS	-	-	-	-	-	-	-	20	-	-	-	-	-	2.5
Turbellaria	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ectoprocta																				
Pectinella magnifica	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mollusca																				
Bivalvia																				
Juvenile Corbiculacea	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musculium sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastropoda																				
Lymnaea columella	-	-					-	-	-	-	-	-	-	39	20	-	20	-	20	12.4
Oligochaeta																				
Naididae																				
Nais variabilis	20	-					254	274	371	183.8	469	352	898	840	527	664	899	-	98	593.4
Stylaria lacustris	-	-					-	-	-	-	-	-	20	-	-	-	-	-	-	2.5
Pristina brevisita	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubificidae	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbriculidae	-	-					-	-	-	-	39	-	-	-	-	-	-	-	-	4.9
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	-	-					39	59	20	23.6	20	-	-	-	-	-	78	-	-	12.3
Ilyocryptus spinifer	-	-					-	-	-	-	-	-	-	-	-	-	20	-	-	2.5
Ostracoda																				
Lymnocethere sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda																				
Hyalella azteca	-	-					-	-	-	-	98	312	20	39	39	59	20	-	-	73.4
Arachnoidea																				
Hydracarnia	-	-					-	-	-	-	-	-	-	-	-	-	-	-	20	2.5
Insecta																				
Odonata																				
Nehallenia sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cordulegaster sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

$(\#/m^2)$

TAXON	9 Shallow A	B	C	Mid A	B	C	Deep A	B	C	$\bar{X}$	12 A	B	C	D	E	F	G	H	I	$\bar{x}$
Ephemeroptera																				
Stenacron interpunctatum	-	-	NS	NS	NS	NS	-	-	-	-	20	-	-	-	-	20	-	-	-	5.0
Trichoptera																				
Neureclipsis sp.	-	-					-	-	-	-	-	-	-	-	-	-	39	-	-	4.9
Cheumatopsyche sp.	-	-					-	-	-	-	156	20	20	-	-	-	-	-	-	24.5
Helicopsyche borealis	-	-					-	-	-	-	-	-	-	-	-	-	-	20	-	2.2
Plecoptera																				
Pteronarcys sp.	-	-					-	-	-	-	20	-	-	-	-	-	-	-	-	2.2
Diptera																				
Stratiomyiidae																				
Odontomyia sp.	-	-					-	-	-	-	20	-	-	-	-	-	-	-	-	2.2
Tipulidae sp. (pupae)	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ceratopogonidae																				
Ceratoponinae	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chironomidae																				
Procladius sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ablabesmyia sp.	-	-					-	-	20	4.0	-	-	-	-	-	-	-	-	-	-
Pentaneurini spp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chironomus spp.	-	-					20	-	20	8.0	-	-	-	-	-	-	-	-	-	-
Cryptochironomus fulvus	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. sp.	-	-					-	-	-		-	-	-	-	-	-	-	-	-	-
Einfeldia sp.	-	-					20	-	-	4.0	-	-	-	-	-	-	-	-	-	-
Glyptotendipes senilis	-	-					20	-	-	4.0	-	-	-	-	-	-	-	-	-	-
G. sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicrotendipes nervosus	-	-					-	-	20	4.0	-	-	-	-	-	-	-	215	-	-
D. neomodestus	-	-					39		-	7.8	-	-	-	-	-	-	-	-	-	-
D. lobus	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
D. sp.	-	-					20	20	-	8.0	-	-	-	-	-	-	-	[illegible]	-	-
Tribelos fuscicornis	-	-					59	-	78	27.4	-	-	-	-	-	-	-		-	-
Goeldichironomus holoprasinus		-					20	-	-	4.0	-	-	-	-	-	-	-	-	-	
Microtendipes sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-

NS = Not sampled

APPENDIX E-3

November Hester-Dendy Densities

($\#/m^2$)

	9									
	Shallow			Mid			Deep			
TAXON	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cricotopus sp.	-	-	NS	NS	NS	NS	20	-	-	4.0
Rheotanytarsus sp.	-	-					-	-	-	-
Psectrocladius sp.	-	-					-	-	-	-
Thienemanniella sp.	-	-					-	-	-	-
Eukiefferiella sp.	-	-					20	-	-	4.0
Trichocladius sp.	-	-					-	-	-	-
Chironomidae pupae	-	-					-	-	20	4.0
Total Numbers of Organisms	20	0					531	353	549	287
Total Numbers of Species	1	0					11	3	7	14
H' - Shannon Diversity Index										1.48

	12									
TAXON	A	B	C	D	E	F	G	H	I	$\bar{X}$
Cricotopus sp.	1680	2808	3418	566	527	1601	2500	-	2695	1974.4
Rheotanytarsus sp.	-	-	-	-	-	-	20	-	-	2.5
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-
Thienemanniella sp.	39	-	20	-	-	-	-	-	20	9.9
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-
Trichocladius sp.	-	-	-	-	-	-	-	-	-	-
Chironomidae pupae	98	117	352	39	117	234	137	59	234	154
Total Numbers of Organisms	2659	3609	4728	1543	1230	2578	3733	489	3087	2873
Total Numbers of Species	11	5	7	6	5	5	9	4	6	18
H' - Shannon Diversity Index										1.02

NS = Not sampled

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cnidaria																				
Hydra americana	-	-	-	-	-	.004	NS	NS	NS	.01	-	-	-	-	-	-	NS	NS	NS	-
Nematoda	-	-	-	•	-	•				•	-	•	-	•	-	-				•
Ectoprocta																				
Pectinella magnifica																				
Mollusca																				
Lymnaea columella	-	.10	-	-	-	-				.02	-	-	-	-	-	-				-
Oligochaeta																				
Pristina brevisita	-	-	-	.02	-	-				.004	-	-	-	-	-	-				-
P. aequista	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Nais variabilis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	.41	.03	.15	.18	.29	.13				.20	.55	.60	.51	.24	.36	.50				.46
Chydorus sphaericus	-	-	-	-	-	-				-	-	•	-	-	-	-				•
Alona guttata	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. quadrangularis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. affinis	-	-	-	-	-	-				-	-	-	-	-	-	-				-
A. costata	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Leydigia acanthocercoides	.001	-	-	-	-	-				<.001	-	-	-	-	<.001	-				<.001
Ilyocryptus spinifer	-	-	-	-	-	-				-	-	-	-	-	-	-				-
I. sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Copepoda																				
Cyclopoida	•	•	•	-	•	•				•	•	•	-	•	•	•				•
Harpacticoida	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Insecta																				
Trichoptera																				
Cheumatopsyche sp.	-	-	.14	-	-	-				.02	-	-	-	-	-	-				-

* Indicates the presence of statocysts and/or soft tissue from this colonial organism

NS = Not sampled

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Diptera																				
Chironomidae																				
Chironomus sp.	-	-	.02	-	-	-	NS	NS	NS	.002	-	-	-	-	-	-	NS	NS	NS	-
Cricotopus sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
Pentaneurini sp.	-	-	-	-	-	-				-	-	-	-	-	-	-				-
TOTAL	.41	.13	.31	.20	.29	.17				.26	.55	.60	.51	.24	.36	.50				.46

NS = Not sampled

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	5 Shallow A	5 Shallow B	5 Shallow C	5 Mid A	5 Mid B	5 Mid C	5 Deep A	5 Deep B	5 Deep C	5 $\bar{X}$	7 Shallow A	7 Shallow B	7 Shallow C	7 Mid A	7 Mid B	7 Mid C	7 Deep A	7 Deep B	7 Deep C	7 $\bar{X}$
Cnidaria																				
Hydra americana	-	.004	-	-	-	-	-	-	-	.0004	-	-	-	-	-	-	-	-	-	-
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ectoprocta																				
Pectinella magnifica																				
Mollusca																				
Lumnaea magnifica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oligochaeta																				
Pristina brevisita	.14	.19	.05	.08	.11	.25	.22	.16	.09	.14	.11	.09	.09	.02	.03	-	.09	.03	.05	.06
P. aequista	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nais variabilis	-	-	-	.03	.03	.08	-	-	-	.05	-	-	-	-	-	-	-	-	-	-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	.07	.13	.20	.02	.04	.04	-	-	-	.05	.04	.07	.06	.04	.02	-	-	-	-	.03
Chydorus sphaericus	•	-	•	-	-	•	-	-	-	•	-	-	-	-	-	-	-	-	-	-
Alona guttata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. quadrangularis	-	-	<.001	.003	.002	.005	.006	.005	.001	.007	.002	-	-	-	-	-	-	-	-	<.001
A. affinis	-	-	<.001	.003	.002	.006	.007	.006	.002	.003	-	-	-	-	-	-	-	-	-	-
A. costata	-	-	<.001	.002	.001	.003	.003	.003	<.001	.001	-	-	-	-	-	-	-	-	-	-
Leydigia acanthocercoides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ilyocryptus spinifer	-	-	-	-	-	•	•	•	-	•	-	-	-	-	-	-	-	-	-	-
I. sp.	-	-	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-
Copepoda																				
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-	•	•	-	•	-	•	•	-	•
Harpacticoida	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	•
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insecta																				
Trichoptera																				
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\overline{X}$	A	B	C	A	B	C	A	B	C	$\overline{X}$
Diptera																				
Chironomidae																				
Chironomus sp.	-	-	-	.02	-	.02	-	-	-	<.001	-	-	-	.02	-	-	-	-	-	<.001
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentaneurini sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.21	.32	.25	.16	.19	.40	.24	.17	.09	.25	.15	.16	.15	.08	.05	0	.09	.03	.05	.09

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	9 Shallow A	B	C	Mid A	B	C	Deep A	B	C	$\bar{X}$	12 A	B	C	$\bar{X}$
Cnidaria														
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nematoda	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ectoprocta														
Pectinella magnifica														
Mollusca														
Lymnaea magnifica	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oligochaeta														
Pristina brevisita	-	-	-	-	-	-	-	-	-	-	-	.02	-	.005
P. aequista	-	-	-	-	-	-	-	-	-	-	.02	-	-	.005
Nais variabilis	-	-	-	-	-	-	-	-	-	-	-	-	-	.005
Arthropoda														
Crustacea														
Cladocera														
Sida crystallina	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chydorus sphaericus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alona guttata	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. quadrangularis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. affinis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A. costata	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leydigia acanthocercoides	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ilyocryptus spinifer	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I. sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda														
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpacticoida	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda														
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insecta														
Trichoptera														
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	.14	-	.05

APPENDIX E-4

April Hester-Dendy Biomass

(g/m^2)

TAXON	9										12			
	Shallow			Mid			Deep							
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	$\bar{X}$
Diptera														
Chironomidae														
Chironomus sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cricotorus sp.	-	-	-	-	-	-	-	-	-	-	.28	.36	.39	.34
Pentaneurini sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	0	0	0	0	0	0	0	0	0	0	.32	.52	.39	.41

APPENDIX E-4

June Hester-Dendy Biomass

(g/m^2)

TAXON	1							3							5						
	Shallow		Mid		Deep			Shallow		Mid		Deep			Shallow		Mid		Deep		
	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$
Cnidaria																					
Hydra americana	-	-	-	-	-	-	-	.08	.16	5.31	3.52	NS	NS	2.27	.16	.23	-	-	-	-	.07
Turbellaria	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Ectoprocta																					
Pectinella magnifica																					
Mollusca																					
Bivalvia																					
Juvenile Corbiculacea	-	-	-	-	-	-	-	.04	.0?	-	-			.03	-	-	-	-	-	-	-
Gastropoda																					
Ferrissia rivularis	-	.23	3.00	1.96	.12	-	.89	-	-	-	-			-	-	-	-	-	-	-	-
Lymnaea columella	3.05	5.49	-	-	-	-	1.42	-	-	-	-			-	-	-	-	-	-	-	-
Oligochaeta																					
Naididae																					
Nais variabilis	.26	.?6	.20	.29	.06		.20	1.18	1.36	.60	1.39			1.13	2.41	2.11	-	.03	.01	.07	.77
Pristina brevisita	.05	-	-	-	-	-	.01	-	-	.07	-			.02	-	-	-	-	-	-	-
P. longesita	-	-	-	-	-	-	-	.05	.12	-	-			.04	.01	.04	-	-	-	-	.01
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Chaetogaster setosa	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Enchytraeidae	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Arthropoda																					
Crustacea																					
Cladocera																					
Sida crystallina	-	-	-	-	.01	-	.001	-	-	-	-			-	.01	.02	-	-	-	-	.01
Ilyocryptus spinifer	-	-	-	-	-	-	-	*	*	*	-			*	-	-	-	-	-	-	-
Ostracoda																					
Lymnocythere sp.	-	-	-	-	-	-	-	*	*	*	*			*	-	-	-	-	-	-	-
Copepoda																					
Harpacticoida	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Cyclopoida	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Amphipoda																					
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Decapoda																					
Procambarus speculifer	-	-	-	-	-	-	-	.17	-	-	-			.04	-	-	-	-	-	-	-

NS = Not sampled

* Biomass estimated at less than 1 % of station total

APPENDIX E-4

June Hester-Dendy Biomass

(g/m^2)

TAXON	1 Shallow A	1 Shallow B	1 Mid A	1 Mid B	1 Deep A	1 Deep B	1 $\bar{X}$	3 Shallow A	3 Shallow B	3 Mid A	3 Mid B	3 Deep A	3 Deep B	3 $\bar{X}$	5 Shallow A	5 Shallow B	5 Mid A	5 Mid B	5 Deep A	5 Deep B	5 $\bar{X}$
Arachnoidea																					
Hydracarnia	-	-	-	-	-	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-
Insecta																					
Ephemeroptera																					
Ephemerella invaria	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
E. sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Stenacron interpuntatum	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Trichoptera																					
Polycentropus sp.	.03	.08	-	-	-	-	.06	-	-	-	-			-	-	-	-	-	-	-	-
Neureclipsis sp.	-	-	-	-	-	-	-	1.93	1.34	1.63	2.00			1.73	2.30	1.93	.08	-	-	1.49	.97
Cheumatopsyche sp.																					
Coleoptera																					
Elmidae																					
Dubiraphia sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Diptera																					
Tipulidae (pupae)	-	-	.03	-	-	-	.01	.02	.02	-	-			.01	-	-	-	-	-	-	-
Chironomidae																					
Procladius sp.	-	-	-	-	.03	.05	.01	-	-	-	-			-	-	-	-	-	-	-	-
Ablabesmyia sp.	-	-	-	-	-	-	-	.02	-	.05	-			.02	-	-	-	-	-	-	-
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Chironomus sp.	-	-	.02	-	.02	-	.01	-	-	-	-			-	-	-	-	-	-	-	-
Dicrotendipes nervosus	.02	.02	.06	.03	.02	-	.02	.55	.77	1.32	1.42			1.012	2.05	1.50	.03	-	.03	.06	.61
D. neomodestus	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
D. sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Einfeldia sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Glyptotendipes sp.	.02	-	-	-	-	-	.002	-	-	-	-			-	-	-	-	-	-	-	-
Psectrocladius sp.	-	-	-	-	.03	.02	.01	.16	.03	-	-			.05	-	-	-	-	-	-	-
Rheotanytarsus sp. A	.03	.02	-	.02	-	-	.01	-	-	-	-			-	-	-	-	-	-	-	-
R. sp. B	-	-	-	-	-	.02	.002	.05	-	-	-			.01	.06	.02	-	-	-	-	.01
R. sp. C	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Tribelos fuscicornis	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Orthocladius sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-

NS = Not sampled

APPENDIX E=4

June Hester-Dendy Biomass

(g/m^2)

	1							3							5						
	Shallow		Mid		Deep			Shallow		Mid		Deep			Shallow		Mid		Deep		
TAXON	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	NS	NS	-	-	-	-	-	-	-	-
Potthatia longimanus	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Polypedium convictum	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-
Total Biomass	3.46	6.20	3.31	2.30	0.29	0.09	2.65	4.20	3.80	8.97	8.33			6.36	7.00	5.85	0.11	0.03	0.04	1.62	2.45

NS = Not sampled

APPENDIX E-4

June Hester-Dendy Biomass

(g/m^2)

TAXON	7 Shallow A	7 Shallow B	7 Mid A	7 Mid B	7 Deep A	7 Deep B	7 $\bar{X}$	9 Shallow A	9 Shallow B	9 Mid A	9 Mid B	9 Deep A	9 Deep B	9 $\bar{X}$	12 A	12 B	12 $\bar{X}$
Cnidaria																	
Hydra americana	-	.08	-	-	-	-	.10	NS	NS	NS	NS	NS	NS		-	-	-
Turbellaria	-	.10	-	-	-	-	.02								.05	-	.03
Ectoprocta																	
Pectinella magnifica																	
Mollusca																	
Bivalvia																	
Juvenile Corbiculacea	-	-	-	-	-	-	-								-	-	-
Gastropoda																	
Ferrissia rivularis	-	-	-	-	-	-	-								-	-	-
Lymnaea columella	-	-	-	-	-	-	-								.20	-	.10
Oligochaeta																	
Naididae																	
Nais variabilis	2.78	2.93	1.72	4.28	.10	.01	1.97								8.09	3.64	5.87
Pristina brevisita	-	-	-	-	-	-	-								-	-	-
P. longesita	.84	.97	.08	-	-	-	.32								-	-	-
Stylaria lacustris	-	-	-	-	-	-	-								.05	.19	.12
Chaetogaster setosa	-	-	-	-	-	-	-								.16	-	.08
Lumbriculidae	-	-	-	-	-	-	-								.03	-	.01
Enchytraeidae	-	-	-	-	-	-	-								-	.84	.42
Arthropoda																	
Crustacea																	
Cladocera																	
Sida crystallina	.03	.01	.01	-	.01	-	.01								-	-	-
Ilyocryptus spinifer	-	-	-	-	-	-	-								-	-	-
Ostracoda																	
Lymnocythere sp.	-	-	-	-	-	-	-								-	-	-
Copepoda																	
Harpacticoida	-	-	-	-	-	-	-								-	-	-
Cyclopoida	*	*	*	*	*	*	*								-	-	-
Amphipoda																	
Hyalella azteca	-	-	-	-	-	-	-								.03	.01	.02
Decapoda																	
Procambarus speculifer	-	-	-	-	-	-	-								-	-	-

NS = Not sampled

* Biomass estimated at less than 1 % of station total

APPENDIX E-4

June Hester-Dendy Biomass

(g/m^2)

TAXON	7 Shallow A	7 Shallow B	7 Mid A	7 Mid B	7 Deep A	7 Deep B	7 $\bar{X}$	9 Shallow A	9 Shallow B	9 Mid A	9 Mid B	9 Deep A	9 Deep B	9 $\bar{X}$	12 A	12 B	12 $\bar{X}$
Arachnoidae																	
Hydracania	-	-	-	-	-	-	-	NS	NS	NS	NS	NS	NS	NS	*	*	*
Insecta																	
Empheuroptera																	
Ephemerella invaria	-	-	-	-	-	-	-								.20	-	.10
E. sp.	-	-	-	-	-	-	-								-	.10	.05
Stenacron interpuntatum	-	-	-	-	-	-	-								-	.24	.12
Trichoptera																	
Polycentropus sp.	-	-	-	-	-	-	-								-	-	-
Neureclipsis sp.	.67	-	-	-	-	-	.11								-	-	-
Cheumatopsyche sp.	-	-	-	-	-	-	-								-	.67	.33
Coleoptera																	
Elmidae																	
Dubiraphia sp.	-	-	-	-	-	-	-								.16	.11	.13
Diptera	-	-	-	-	-	-	-								-	-	-
Tipulidae (pupae)																	
Chironomidae																	
Procladius sp.	-	-	.03	-	-	-	.01								-	-	-
Ablabesmyia sp.	-	-	-	-	-	-	-								-	-	-
Cricotopus sp.	-	-	-	-	-	-	-								1.08	.84	.96
Chironomus sp.	-	-	.16	-	-	-	.03								-	-	-
Dricotendipes nervosus	1.09	.72	.19	.09	-	-	.35								-	-	-
D. neomodestus	-	-	-	.02	-	-	.002								-	-	-
D. sp.	-	-	-	.16	-	.02	.03								-	-	-
Einfeldia sp.	-	-	-	.02	-	-	.002								-	-	-
Glyptotendipes sp.	-	.05	-	-	-	-	.01								-	-	-
Psectrocladius sp.	-	-	.02	-	.02	-	.01								-	-	-
Rheotanytarus sp. A	-	-	-	-	-	-	-								-	-	-
R. sp. B	-	.02	-	-	-	-	.002								-	.08	.04
R. sp. C	-	-	-	-	-	-	-								-	.02	.01
Tribeloe fusicornis	-	.02	.16	-	-	-	.03								-	-	-
Orthocladius sp.	-	-	-	-	-	-	-								1.05	1.09	1.07
Eukiefferiella sp.	-	-	-	-	-	-	-								.03	-	.02

NS = Not sampled

* Biomass estimated at less than 1 % of station total

APPENDIX E-4

June Hester-Dendy Biomass

(g/m^2)

TAXON	7							9							12		
	Shallow		Mid		Deep			Shallow		Mid		Deep					
	A	B	A	B	A	B	$\bar{X}$	A	B	A	B	A	B	$\bar{X}$	A	B	$\bar{X}$
Thienemanniella sp.	-	-	-	-	-	-	-	NS	NS	NS	NS	NS	NS		-	.09	.05
Potthastia longimanus	-	-	-	-	-	-	-								.02	.05	.03
Polypedium convictum	-	-	-	-	-	-	-								-	.05	.02
Total Biomass	7.17	4.90	2.37	4.57	0.13	.03	3.10							-	11.15	8.02	9.52

NS = Not sampled

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	1 Shallow A	1 Shallow B	1 Shallow C	1 Mid A	1 Mid B	1 Mid C	1 Deep A	1 Deep B	1 Deep C	1 X̄	3 Shallow A	3 Shallow B	3 Shallow C	3 Mid A	3 Mid B	3 Mid C	3 Deep A	3 Deep B	3 Deep C	3 X̄
Cnidaria																				
Hydra americana	-	-	-	-	-	-	.04	-	-	.004	-	.118	-	-	-	-	.352	-	-	.052
Turbellaria	.052	-	.1014	-	-	-	-	-	-	.017	-	.052	-	-	-	-	-	-	-	.006
Ectoprocta																				
Juvenile Corbiculacea																				
Mollusca																				
Bivalvia																				
Sphaerium partumeium	-	-	-	-	-	-	-	.022	-	.003	-	-	-	-	-	-	-	-	-	-
Musculium sp.	-	-	.030	.030	-	-	-	-	-	.007	-	-	-	-	-	-	-	-	-	-
Gastropoda																				
Lymnaea columella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oligochaeta																				
Naididae																				
Nais variabilis	.460	.578	.460	1.038	1.611	.578	.808	.690	2.879	1.011	.348	-	.690	.460	-	.460	1.269	.460	5.068	.973
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pristina breviseta	-	-	-	-	-	-	-	-	-	-	-	-	.012	-	-	.012	-	-	-	.003
Tubificidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	.021	.027	.089	.670	.492	.943	.068	.014	.082	.267	.034	-	.205	.602	.677	.684	.868	.984	.397	.494
Ilyocryptus spinifer	-	-	-	-	-	-	-	-	-	-	-	-	.205	-	.002	-	-	-	-	.0004
Ostracoda																				
Limnocythere sp.	*	*	*	*	*	*	-	-	*	*	*	*	*	*	*	*	*	*	*	
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arachnoidea																				
Hydracarnia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insecta																				
Odonata																				
Nehalennia sp.	.82	-	-	-	-	-	-	-	-	.090	-	-	-	-	-	-	-	-	-	-
Cordulegaster sp.	-	-	-	.440	-	-	-	-	-	.048	-	-	-	-	-	-	-	-	-	-

* Biomass estimated at less than 1 % of station total

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Ephemeroptera																				
Stenacron interpunctatum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichoptera																				
Neuroclipsis sp.	.296	.076	.148	.669	.741	.148	-	-	-	.231	1.558	2.079	1.486	1.338	1.782	1.558	.593	.148	.817	1.262
Cheumatopsyche sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helicopsyche borealis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plecoptera																				
Pteronarcys sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diptera																				
Stratiomyiidae																				
Odontomyia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tipulidae sp. (pupae)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ceratopogonidae																				
Ceratoponinae	-	-	.018	-	-	-	-	-	-	.002	-	-	-	-	-	-	-	-	-	-
Chironomidae																				
Procladius sp.	-	.016	-	-	-	-	-	-	-	.002	-	-	-	-	.016	.016	-	-	.016	.005
Ablabesmyia sp.	-	.016	-	-	-	-	-	-	-	.002	-	.031	-	-	-	.016	-	-	-	.005
Pentaneurini spp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.031	-	-	-	-	.004
Chironomus spp.	-	-	.016	.016	.016	.047	.156	.016	.110	.042	.016	-	-	-	-	-	.031	-	.047	.010
Cryptochironomus fulvus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. sp.	-	-	-	-	-	-	-	-	.016	.002	-	-	-	-	-	-	-		-	-
Einfeldia sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glyptotendipes senilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.047	-	.005
G. sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.078	-	-	-	.009
Dricotendipes nervosus	.047	-	-	.016	.031	.016	.016	-	-	.014	.266	.344	.230	.547	.234	.313	.875	.641	.500	.436
D. neomodestus	-	-	-	-	-	-	-	-	-	-	-	.031	-	-	-	-	.016	-	-	.005
D. lobus	-	.031	-	-	-	-	-	-	.031	.007	.047	.234	.031	.375	-	-	.094	.047	.016	.094
D. sp.	-	-	-	.031	.016	-	-	-	-	.005	.359	.047	.375	.078	.859	.703	.051	.948	.067	.442
Tribelos fusicornis	-	-	-	-	-	-	-	-	-	-	-	.016	-	-	.172	.016	.390	.016	.016	.070
Goeldichironomus holoprasinus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microtendipes sp.	-	-	-	-	-	-	-	-	-	-	-	-	.016	.094	-	-	-	-	-	.012

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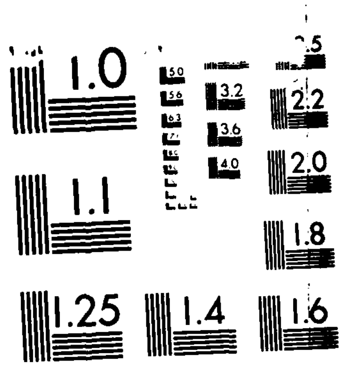
UNCLASSIFIED F/G 8/8 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	1										3									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	$\bar{X}$	A	B	C	A	B	C	A	B	C	$\bar{X}$
Cricotopus sp.	-	-	-	-	-	-	-	-	-	.002	-	-	-	-	-	-	-	-	.016	.002
Rheotanytarsus sp.	.047	-	.016	.078	.016	.110	-	-	.016	.031	-	.016	-	.016	-	-	.016	-	.031	.009
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.094	-	-	-	.010
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichocladius sp.	-	-	-	.016	-	-	-	-	-	.002	-	-	-	-	-	-	-	-	-	-
Chironomidae pupae	-	-	.016	.031	-	.016	-	-	-	.007	-	-	-	-	-	-	-	-	-	-
TOTAL	1.74	.74	.43	2.03	2.92	1.9	1.1	.74	3.1	1.80	2.6	3.0	3.3	.11	3.8	4.0	4.6	3.3	7.0	3.90

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	X̄	A	B	C	A	B	C	A	B	C	X̄
Cnidaria																				
Hydra americana	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	-	-	-	-	-	-
Turbellaria	-	-	-	-	-	-	-	-	-	-	-	-		.559	.406	.458	-	-	-	.178
Ectoprocta																				
Pectinatella magnifica																				
Mollusca																				
Bivalvia																				
Juvenile Corbiculacea	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Musculium sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Gastropoda																				
Lymnaea columella	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Oligochaeta																				
Naididae																				
Nais variabilis	.690	1.151	.690	.348	.230	.118	.118	.460	-	.358	1.500	.230		20.25	4.608	3.918	31.80	24.77	19.01	13.26
Stylaria lacustris	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Pristina brevisita	.204	-	.012	-	-	-	-	-	-	.004	-	-		-	-	.0124	-	-	-	.001
Tubificidae	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Lumbriculidae	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Arthropoda																				
Crustacea																				
Cladocera																				
Sida crystallina	.137	.663	1.183	.560	.465	.308	.137	2.878	3.028	.978	.041	.144		.041	.027	.171	2.333	2.509	2.782	1.006
Ilyocryptus spinifer	.016	-	.020	-	.003	.002	.012	.012	.003	.008	.003	.003		-	-	-	.002	-	.003	.001
Ostracoda																				
Lymnocythere sp.	*	*	*	-	-	-	*	-	-	*	*	*		-	-	-	-	-	-	*
Amphipoda																				
Hyalella azteca	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Arachnoidea																				
Hydracarnia	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Insecta																				
Odonata																				
Nehallenia sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Cordulegaster sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-

NS = Not sampled

* Biomass estimated at less than 1 % of station total

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	5										7									
	Shallow			Mid			Deep				Shallow			Mid			Deep			
	A	B	C	A	B	C	A	B	C	X̄	A	B	C	A	B	C	A	B	C	X̄
Cricotopus sp.	-	-	-	-	-	-	-	-	-	-	-	-	NS	-	-	-	-	-	-	-
Rheotanytarsus sp.	.016	.047	.094	.016	.031	-	-	-	-	.037	.078	.031		-	.031	-	.016	-	-	.017
Psectrocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Thienemanniella sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Eukiefferiella sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Trichocladius sp.	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Chironomidae pupae	-	-	-	.016	.031	.047	-	.047		.016	.013	-		.016	-	-	.016	-	.016	.010
TOTAL	4.90	4.86	4.466	3.49	4.40	2.90	3.04	6.11	5.43	4.32	2.78	2.63		21.89	5.65	5.21	34.44	27.72	21.88	15.30

NS = Not sampled

APPENDIX E-4

November Hester-Dendy Biomass

(g/m^2)

TAXON	9 Shallow A	9 Shallow B	9 Shallow C	9 Mid A	9 Mid B	9 Mid C	9 Deep A	9 Deep B	9 Deep C	9 $\bar{X}$	12 A	12 B	12 C	12 D	12 E	12 F	12 G	12 H	12 I	12 $\bar{X}$
Ephemeroptera																				
Stenacron interpunctatum	-	-	NS	NS	NS	NS	-	-	-	-	1.02	-	-	-	-	1.02	-	-	-	.255
Tricoptera																				
Neureclipsis sp.	-	-					-	-	-	-	-	-	-	-	-	-	.148	-	-	.019
Cheumatopsyche sp.	-	-					-	-	-	-	1.108	.142	.142	-	-	-	-	-	-	.174
Helicopsyche borealis	-	-					-	-	-	-	-	-	-	-	-	-	-	.028	-	.003
Plecoptera																				
Pteronarcys sp.	-	-					-	-	-	-	4.164	-	-	-	-	-	-	-	-	.463
Diptera																				
Stratiomyiidae																				
Odontomyia sp.	-	-					-	-	-	-	.016	-	-	-	-	-	-	-	-	.002
Tipulidae sp. (pupae)	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ceratopogonidae																				
Ceratopogoninae	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chironomidae																				
Procladius sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ablabesmyia sp.	-	-					-	-	.016	.003	-	-	-	-	-	-	-	-	-	-
Pentaneurini spp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chironomus spp.	-	-					.016	-	.016	.006	-	-	-	-	-	-	-	-	-	-
Cryptochironomus fulvus	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
C. sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Einfeldia sp.	-	-					.016	-	-	.003	-	-	-	-	-	-	-	-	-	-
Glyptotendipes senilis	-	-					.016	-	-	.003	-	-	-	-	-	-	-	-	-	-
G. sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dricotendipes nervosus	-	-					-	-	.016	.003	-	-	-	-	-	-	-	.172	-	-
D. neomodestus	-	-					.031	-	-	.006	-	-	-	-	-	-	-	-	-	-
D. lobus	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-
D. sp.	-	-					.016	.016	-	.006	-	-	-	-	-	-	-	.156	-	-
Tribelos fuscicornis	-	-					.047	-	.062	.022	-	-	-	-	-	-	-	-	-	-
Goeldichironomus holoprasinus	-	-					.016	-	-	.003	-	-	-	-	-	-	-	-	-	-
Microtendipes sp.	-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-

NS = Not sampled

APPENDIX F

SEDIMENTS

APPENDIX LIST

APPENDIX F-1

Physical and Chemical Data

Sediment Grain Size Analysis
(% Total)

Grain Size (mm)	Station 1-1 Mar	1-1 Sep	1-2 Mar	1-2 Sep	1-3 Mar	1-3 Sep
>12.7						
12.7 - 3.36				0.3		
3.36 - 2.00	1.7	8.5	3.8	1.0	5.7	4.2
2.00 - 0.50	12.8	19.1	15.1	11.4	9.7	13.3
0.50 - 0.25	16.9	19.3	19.9	25.7	12.7	22.7
0.25 - .125	44.6	39.2	38.1	42.1	31.7	39.8
.125 - .045	22.8	18.7	20.9	19.8	19.3	17.2
< .045	1.1	0.7	2.2	0.3	5.9	2.9

Grain Size (mm)	2-1 Mar	2-1 Sep	2-2 Mar	2-2 Sep	2-3 Mar	2-3 Sep
> 12.7						
12.7 - 3.36						
3.36 - 2.00	0.8	0.2	1.1	0.4	0.2	0.2
2.00 - 0.50	15.2	9.2	21.0	14.5	10.0	12.9
0.50 - 0.25	17.6	16.4	11.8	17.3	23.0	16.8
0.25 - .125	38.8	42.9	49.1	40.3	51.1	38.6
.125 - .045	25.6	30.2	17.3	26.4	15.0	31.2
< .045	1.9	1.0	0.1	1.2	0.6	0.3

Grain Size (mm)	3-1 Mar	3-1 Sep	3-2 Mar	3-2 Sep	3-3 Mar	3-3 Sep
> 12.7						
12.7 - 3.36						1.1
3.36 - 2.00	1.1	4.3	8.4	7.2	1.0	2.9
2.00 - 0.50	2.7	8.8	12.3	10.1	14.0	11.8
0.50 - 0.25	20.9	19.2	9.8	15.7	14.2	13.2
0.25 - .125	36.7	40.3	28.8	30.0	30.6	39.9
.125 - .045	33.7	24.7	38.0	33.9	36.1	28.7
< .045	4.8	2.1	2.8	3.8	4.4	3.3

Physical and Chemical Data

Sediment Grain Size Analysis

(% Total)

Grain Size (mm)	4-1 Mar	4-1 Sep	4-2 Mar	4-2 Sep	4-3 Mar	4-3 Sep
> 12.7			0.5			
12.7 - 3.36			3.7	2.2	1.1	6.4
3.36 - 2.00			7.8	7.6	13.1	10.8
2.00 - 0.50			15.6	18.3	12.4	22.5
0.50 - 0.25	Insufficient		35.7	29.9	35.2	26.8
0.25 - .125			23.5	30.1	35.6	24.8
.125 - .045	Sample		13.2	11.4	2.5	7.9
< .045				1.6	0.4	0.8

Grain Size (mm)	5-1 Mar	5-1 Sep	5-2 Mar	5-2 Sep	5-3 Mar	5-3 Sep
> 12.7		0.7			0.4	0.2
12.7 - 3.36	4.7	6.2	3.8	1.0	6.9	6.1
3.36 - 2.00	9.0	8.5	4.9	9.9	10.0	6.1
2.00 - 0.50	5.2	17.2	11.0	11.8	16.1	21.2
0.50 - 0.25	19.9	36.2	19.1	31.2	21.2	20.8
0.25 - .125	25.0	20.4	20.0	15.3	35.7	29.5
.125 - .045	32.5	10.0	26.2	21.9	9.0	11.7
< .045	3.7	0.9	15.1	8.8	0.7	4.5

Grain Size (mm)	6-1 Mar	6-1 Sep	6-2 Mar	6-2 Sep	6-3 Mar	6-3 Sep
> 12.7						
12.7 - 3.36	0.1		2.2	0.3	1.2	
3.36 - 2.00	3.3	4.1	7.2	5.5	3.9	9.8
2.00 - 0.50	16,1	21.5	17.4	17.9	12.6	23.1
0.50 - 0.25	22.2	20.4	27.5	29.1	19.8	28.2
0.25 - .125	26.6	31.1	21.7	26.3	29.5	24.7
.125 - .045	31.2	22.7	23.2	20.7	32.8	13.1
< .045	0.4	0.2	0.5	0.1	0.1	

APPENDIX F-1

Physical and Chemical Data

Sediment Grain Size Analysis

(% Total)

Grain Size (mm)	Station 7-1 Mar	7-1 Sep	7-2 Mar	7-2 Sep	7-3 Mar	7-3 Sep
> 12.7						
12.7 - 3.36	0.2			1.7	1.9	0.7
3.36 - 2.00	5.6	4.8	8.6	10.2	3.4	7.4
2.00 - 0.50	14.1	22.3	17.0	14.8	13.3	18.8
0.50 - 0.25	21.1	27.5	18.3	27.3	25.5	31.2
0.25 - .125	26.6	24.1	30.9	30.8	36.0	30.0
.125 - .045	32.0	21.3	25.2	11.9	19.6	10.3
< .045	0.4			3.3	0.4	1.7

Grain Size (mm)	8-1 Mar	8-1 Sep	8-2 Mar	8-2 Sep	8-3 Mar	8-3 Sep
> 12.7	14.6					
12.7 - 3.36	3.5	7.2	2.3	5.1		6.3
3.36 - 2.00	13.6	21.7	11.8	16.4	21.3	10.0
2.00 - 0.50	14.2	17.3	20.1	14.9	18.8	20.4
0.50 - 0.25	21.8	17.4	21.3	19.9	17.2	13.6
0.25 - .125	15.7	16.8	17.7	20.3	13.6	13.5
.125 - .045	14.4	17.5	23.8	23.0	18.2	35.2
< .045	2.2	2.1	3.1	0.9	2.0	0.8

Grain Size (mm)	9-1 Mar	9-1 Sep	9-2 Mar	9-2 Sep	9-3 Mar	9-3 Sep
> 12.7						
12.7 - 3.36	0.8	2.1		0.7		
3.36 - 2.00	1.1	1.2	2.9	4.3	0.2	0.2
2.00 - 0.50	2.8	15.3	9.4	11.2	13.4	16.8
0.50 - 0.25	19.7	68.8	43.4	53.8	68.8	62.4
0.25 - .125	56.2	12.5	42.9	29.1	17.0	18.4
.125 - .045	19.3		1.3	0.9	0.8	2.1
< .045						

APPENDIX F-1

Physical and Chemical Data

Sediment Grain Size Analysis

(% Total)

Grain Size (mm)	10-1 Mar	10-1 Sep	10-2 Mar	10-2 Sep	10-3 Mar	10-3 Sep
> 12.7	3.6		6.2	4.1		8.9
12.7 – 3.36	0.5	1.2	7.4	9.8	6.5	3.2
3.36 – 2.00	3.5	11.7	4.7	4.1	15.2	8.8
2.00 – 0.50	23.4	27.3	12.8	16.4	20.6	23.3
0.50 – 0.25	35.8	28.9	36.4	30.5	28.4	32.1
0.25 – .125	20.4	16.8	21.7	13.8	19.8	16.2
.125 – .045	2.6	12.8	8.8	19.3	9.4	6.8
< .045		0.9	1.9	2.1		

Grain Size (mm)	11-1 Mar	11-1 Sep	11-2 Mar	11-2 Sep	11-3 Mar	11-3 Sep
> 12.7	11.5	23.5	31.7	18.7		
12.7 – 3.36	15.4	7.5	4.3	12.2		
3.36 – 2.00	3.6	6.5	2.1	8.7		
2.00 – 0.50	23.2	36.4	19.5	27.9	Insufficient	
0.50 – 0.25	26.8	23.3	35.4	26.5	sample	
0.25 – .125	10.4	1.8	7.1	4.8		
.125 – .045	9.1	1.1		1.3		
< .045						

Grain Size (mm)	12-1 Mar	12-1 Sep	12-2 Mar	12-2 Sep	12-3 Mar	12-3 Sep
> 12.7	21.8	34.2	27.8	40.1	14.9	20.4
12.7 – 3.36	4.8	8.4	7.4	8.4	10.3	9.9
3.36 – 2.00	9.0	2.1	4.7	4.2	7.6	11.2
2.00 – 0.50	24.6	20.4	29.4	19.7	26.5	25.0
0.50 – 0.25	34.8	30.8	16.0	18.3	28.2	29.3
0.25 – .125	11.9	4.2	14.9	9.0	5.0	4.8
.125 – .045	0.9			0.3		

APPENDIX F-1

Hartwell Lake Sediments

Physical and Chemical Data

	% Total Solids		% Volatile Solids		TKN mg/kg	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	44.11	37.8	4.68	4.49	779	3383
2	44.55	47.5	5.55	4.07	1330	1298
3	57.15	43.6	5.37	3.18	522	938 (912)
4	51.65	45.1	4.35	4.97	674	933
5	49.48	57.4	3.83	3.37	709	762
6	70.19	60.7	2.60	4.43	140	420
7	43.19	54.5	4.58	5.47	807	1029
8	72.70	50.9	2.89	3.65	405	790
9	77.35	69.1	0.39	0.49	28.3	5
10	66.46	79.2	2.38	1.11	267	105
11	90.43	-	0.72	-	53.7	-
12	79.75	84.1	6.58	0.79	75.9	137

APPENDIX F-1

Hartwell Lake Sediments

Physical and Chemical Data

Station	Total Phosphorus mg/kg Mar.	Total Phosphorus mg/kg Sept.	Oil and Grease mg/kg Mar.	Oil and Grease mg/kg Sept	TOC mg/g (Dry Wt.) Mar.	TOC mg/g (Dry Wt.) Sept.
1	2200	2800	253	800	13.3	15.1
2	2000	1560	650	264	15.3	16.2
3	1580	2000	< 50	756	10.8 (10.4)	9.6
4	1440	3200	< 50	278	7.06	8.12 (8.18)
5	1220	2200	441	< 50	7.74	7.99
6	1420	2400	< 50	314	3.43	4.01
7	2000	2400	< 50	306	10.6	11.3
8	1340	3000	< 50	364	3.93	4.17
9	620	1020	< 50	< 50	0.33	0.57 (0.55)
10	740	1740	< 50	315	3.10	3.41
11	620	NS	281	-	0.30 (0.31)	-
12	1260	1820	183	< 50	0.53	0.59

APPENDIX F-2

Hartwell Lake Sediments

Metals

Total mg/kg dry weight
(except as noted)

	Copper		Iron (g/kg)		Lead	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	41.4	14.9	730	24	9.9	11.6
2	33.4	11.9	53	17	<4.9	13.8
3	28.9	10.8	44	21	76.5	6.2
4	15.1	8.0	27	16	66.9	4.8
5	16.7	4.8	24	8	74.7	3.6
6	14.1	6.0	21	9	41.3	1.7
6 Dup.	12.8	-	22	-	41.7	-
7	33.9	8.8	42	11	82.2	6.6
8	13.4	14.1	20	20	12.6	12.1
9	2.59	1.4	5	3	11.1	0.9
10	12.0	2.9	18	5	17.2	1.3
11	5.15	-	12	-	<0.6	-
12	3.84	3.1	11	8	20.9	<0.5
12 Dup.	-	3.3	-	8	-	<0.5

APPENDIX F-2

Hartwell Lake Sediments

Metals

Total mg/kg dry weight
(except as noted)

	Manganese		Mercury		Cadmium	
Station	Mar.	Sept.	Mar.	Sept.	Mar.	Sept.
1	771	335	0.94	0.69	< 1.0	< 0.1
2	654	338	< 0.01	0.73	5.6	< 0.1
3	529	331	1.02	0.59	< 1.7	< 0.1
4	498	220	0.32	0.46	< 1.1	< 0.1
5	311	139	1.55	0.60	70.3	< 0.1
6	202	155	0.44	0.39	3.0	< 0.1
6 Dup.	168	-	*	-	4.2	< 0.1
7	428	203	0.66	0.62	6.6	< 0.1
8	656	218	0.62	0.66	3.3	< 0.1
9	76	56	0.05	0.14	0.4	< 0.1
10	228	83	1.20 1.13	0.42 0.45	< 0.8	< 0.1
11	483	-	0.45	-	< 0.6	-
12	1280	1038	0.58	0.41	45.8	< 0.1
12 Dup.	-	1019	-	-	-	< 0.1

APPENDIX F-2

Hartwell Lake Sediments

Metals

Total mg/kg dry weight
(except as noted)

	Nickel		Zinc		Chromium	
Station	Mar.	Sept.	Mar.	Sept.	Mar.	Sept.
1	51.2	10.0	121.0	40.3	34.1	39.7
2	66.8	9.3	135.0	28.8	49.9	44.1
3	34.0	5.3	134.0	50.1	27.3	38.0
4	21.5	6.7	76.6	49.9	44.3	36.2
5	18.3	1.7	138.0	38.6	36.5	19.2
6	17.1	2.6	78.8	16.3	16.4	8.0
6 Dup.	16.0	-	48.6	-	14.7	-
7	33.0	7.4	112.0	23.6	15.6	17.0
8	23.7	14.0	40.4	40.3	26.1	27.5
9	3.31	1.1	9.31	5.4	1.91	3.6
10	18.8	2.6	45.0	11.7	12.0	6.3
11	10.4	-	27.0	-	11.4	-
12	6.11	4.7	18.3	11.3	6.61	34.7
12 Dup.	-	4.4	-	11.6	-	35.7

APPENDIX F-2

Hartwell Lake Sediments

Metals

Total mg/kg dry weight
(except as noted)

	Arsenic	
Station	Mar.	Sept.
1	12.9	10.6
2	15.5	7.6
3	3.6	9.6
4	1.9	7.1
5	3.1	7.0
6	1.5	9.2
6 Dup.	1.1	-
7	1.7	7.0
8	1.6	8.3
9	0.8	7.0
10	1.2	4.0
11	9.1	7.8
12	0.4	7.4
12 Dup.	-	7.3

APPENDIX F-3

Hartwell Lake Sediments

Organics

Total ug/kg wet weight

	Lindane		Heptachlor		Aldrin	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	< 1	< 1	5	2.1	11	33
2	< 1	17.9	24	35.4	38	51
3	< 1	< 1	< 1	< 1	47	12
3	-	< 1	-	< 1	-	18
4	< 1	< 1	112	9	141	128
5	< 1	4.2	37	1.7	61	29
6	7	< 1	56	6.4	39	42
7	< 1	3.1	< 1	< 1	46	1
8	3	< 1	32	1.6	23	22
9	< 1	< 1	5	< 1	7	< 1
9	< 1	-	8	-	9	-
10	< 1	6.2	< 1	1.2	11	2
11	1	-	1	-	4	-
12	< 1	3.7	< 1	< 1	5	12

APPENDIX F-3

Hartwell Lake Sediments

Organics

Total ug/kg wet weight

	Endrin		Mirex		Chlordane	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	<0.2	0.3	<1	13.0	79	306
2	<0.2	3.2	<1	14.3	232	381
3	<0.2	2.1	<1	15.8	101	118
3	-	1.8	-	5.5	-	79
4	<0.2	12.0	<1	23.3	2780	663
5	<0.2	5.1	<1	<1	689	6.0
6	<0.2	1.0	<1	10.0	1960	216
7	<0.2	4.4	26	4.4	2610	<1
8	<0.2	0.8	<1	13.6	2030	56
9	<0.2	<0.2	<1	<1	500	8.0
9	<0.2	-	<1	-	843	-
10	<0.2	<0.2	<1	22.2	203	20
11	<0.2	-	<1	-	42	-
12	<0.2	0.2	<1	13.8	80	53

APPENDIX F-3

Hartwell Lake Sediments

Organics

Total ug/kg wet weight

	DDD		DDE		DDT	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	7	2	5	27	178	13
2	59	32	38	33	1210	14
3	21	<1	26	5	121	16
3	-	<1	-	9	-	6
4	169	22	182	80	811	23
5	107	1	91	19	357	1
6	109	14	76	16	332	10
7	136	<1	105	2	387	4
8	119	15	77	31	274	14
9	43	-	26	-	158	-
10	9	6	1	3	63	22
11	31	-	13	-	64	-
12	7	<1	1	9	24	14

APPENDIX F-3

Hartwell Lake Sediments

Organics

Total ug/kg wet weight

	Toxaphene		Dieldrin		PCB	
Station	Mar.	Sept.	Mar.	Sept	Mar.	Sept.
1	<1	<1	7	7	38	306
2	23	<1	31	21	202	336
3	<1	<1	21	7	620	107
3	-	<1	-	9	-	119
4	136	<1	150	8	1120	1016
5	<1	<1	57	22	1420	522
6	<1	<1	44	7	1540	623
7	<1	<1	49	<1	1320	<1
8	7	<1	48	<1	1420	<1
9	259	<1	10	4	238	<1
9	274	-	26	-	420	-
10	28	<1	1	3	3	<1
11	3	-	5	-	16	-
12	<1	<1	2	8	8	40

APPENDIX G

TISSUES

APPENDIX LIST

APPENDIX G-1

Hartwell Lake Tissue Analysis

Metals in Fish Tissues*

Total ug/kg wet weight

		Cadmium		Chromium	
Station	Organism	Spring	Fall	Spring	Fall
2	Bass	<0.1	<0.1	0.23	0.25
2	Catfish	<0.1	<0.1	0.34	0.33
4	Bass	<0.1	<0.1	0.17	0.15
4	Catfish	<0.1	<0.1	0.70	0.29
7	Bass	<0.1	<0.1	0.17	<0.1
7	Catfish	<0.1	<0.1	0.38	0.34
8	Bass	<0.1	<0.1	0.52	0.6
8	Catfish	<0.1	<0.1	0.13	0.1
9	Bass	<0.1	-	0.79	-
9	Catfish	<0.1	-	0.55	-
12	Bluegill	<0.1	<0.1	0.20	<0.1
12	Catfish	<0.1	<0.1	0.84	<0.1

*All metals analyzed in duplicate; values are averages.

APPENDIX G-1

Hartwell Lake Tissue Analysis

Metals in Fish Tissues

Total ug/kg wet weight

Station	Organism	Zinc Spring	Zinc Fall	Lead Spring	Lead Fall
2	Bass	3.22	4.78	0.50	0.30
2	Catfish	3.89	5.69	0.48	0.47
4	Bass	1.62	5.27	0.28	0.37
4	Catfish	3.48	5.57	0.45	0.65
7	Bass	3.62	4.32	0.44	0.14
7	Catfish	2.14	5.86	0.37	0.37
8	Bass	4.81	2.45	0.48	0.33
8	Catfish	2.76	2.75	0.26	0.24
9	Bass	3.49	-	0.70	-
9	Catfish	4.83	-	0.76	-
12	Bluegill	9.16	7.31	0.17	0.44
12	Catfish	8.40	5.75	0.31	0.46

All metals analyzed in duplicate; values are averages.

APPENDIX G-1

Hartwell Lake Tissue Analysis

Metals in Fish Tissues

Total ug/kg wet weight

		Arsenic		Selenium	
Station	Organism	Spring	Fall	Spring	Fall
2	Bass	<0.01	<0.01	<0.01	<0.01
2	Catfish	<0.01	<0.01	<0.01	<0.01
4	Bass	<0.01	<0.01	<0.01	<0.01
4	Catfish	<0.01	<0.01	<0.01	<0.01
7	Bass	<0.01	<0.01	<0.01	0.12
7	Catfish	<0.01	<0.01	<0.01	<0.01
8	Bass	<0.01	<0.01	<0.01	<0.01
8	Catfish	<0.01	<0.01	<0.01	<0.01
9	Bass	<0.01	-	<0.01	-
9	Catfish	<0.01	-	<0.01	-
12	Bluegill	<0.01	<0.01	<0.01	<0.01
12	Catfish	<0.01	<0.01	<0.01	<0.01

All metals analyzed in duplicate; values are averages.

APPENDIX G-1

Hartwell Lake Tissue Analysis

Metals in Fish Tissues

Total ug/kg wet weight

		Mercury	
Station	Organism	Spring	Fall
2	Bass	0.39	0.22
2	Catfish	0.34	0.29
4	Bass	0.28	0.38
4	Catfish	0.29	0.20
7	Bass	0.63	0.27
7	Catfish	0.29	0.28
8	Bass	0.29	0.23
8	Catfish	0.25	0.29
9	Bass	0.26	-
9	Catfish	0.08	-
12	Bluegill	0.12	0.30
12	Catfish	0.47	0.66

All metals analyzed in duplicate; values are averages.

Recoveries for three EPA Hg Certified Standards:

112% Analyzed with Spring run; July 13, 1981
120% Analyzed with Fall run; December 2, 1981
112% Analyzed with Fall run; December 2, 1981

APPENDIX G-2

Hartwell Lake Tissue Analysis

Metals in Mollusk Tissues*

Total ug/kg wet weight

Station	Organism	Cadmium Spring	Cadmium Fall	Chromium Spring	Chromium Fall
2	L Clam[1]	-	0.5	-	2.57
4	L Clam	0.21	0.08	1.86	2.59
4	S Clam[2]	0.20	0.51	1.43	1.80
7	L Clam	0.32	0.07	2.69	2.11
7	S Clam	A	0.45	A	1.93
8	L Clam	0.10	0.06	0.87	2.19
8	S Clam	0.06	0.18	0.96	1.58
9	L Clam	0.16	0.24	1.59	1.38
12	Crayfish	<0.3	0.15	0.70	1.32

*All metals run in duplicate; values are averages.

A - Insufficient Sample

L Clam[1] -Tissue samples removed from clams of the genus <u>Anodonta</u>

S Clam[2] -Tissue samples removed from clams of the genus <u>Corbicula</u>

APPENDIX G-2

Hartwell Lake Tissue Analysis

Metals in Mollusk Tissues*

Total ug/kg wet weight

Station	Organism	Zinc Spring	Zinc Fall	Lead Spring	Lead Fall
2	L Clam	–	28.12	–	0.53
4	L Clam	24.04	28.47	2.10	0.51
4	S Clam	23.45	37.82	1.10	0.49
7	L Clam	25.82	19.78	2.15	0.38
7	S Clam	A	31.87	A	0.56
8	L Clam	11.76	24.58	1.14	0.15
8	S Clam	15.41	19.55	2.98	0.23
9	L Clam	16.70	29.33	64.62	0.25
12	Crayfish	10.81	25.00	0.22	0.79

All metals run in duplicate; values are averages.

A - Insufficient Sample

APPENDIX G-2

Hartwell Lake Tissue Analysis

Metals in Mollusk Tissues*

Total ug/kg wet weight

Station	Organism	Arsenic Spring	Arsenic Fall	Selenium Spring	Selenium Fall
2	L Clam	-	0.08	-	<0.01
4	L Clam	<0.01	0.03	0.16	0.01
4	S Clam	0.06	0.01	<0.01	0.01
7	L Clam	0.01	-	<0.01	0.01
7	S Clam	A	0.03	A	0.01
8	L Clam	0.02	0.06	<0.01	0.01
8	S Clam	0.03	0.07	0.05	0.09
9	L Clam	0.02	0.08	<0.01	0.07
12	Crayfish	<0.01	A	<0.01	A

All metals run in duplicate; values are averages.

A - Insufficient Sample

APPENDIX G-2

Hartwell Lake Tissue Analysis

Metals in Mollusk Tissues*

Total ug/kg wet weight

Station	Organism	Mercury Spring	Mercury Fall
2	L Clam	SL	0.17
4	L Clam	0.36	0.16
4	S Clam	0.36	0.25
7	L Clam	0.43	0.25
7	S Clam	A	0.27
8	L Clam	0.31	0.27
8	S Clam	0.26	0.17
9	L Clam	0.10	0.31
12	Crayfish	0.21	0.10

All metals run in duplicate; values are averages.

A - Insufficient Sample

SL - Sample Lost

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

Station	Organism	Aldrin Spring	Aldrin Fall	Chlordane Spring	Chlordane Fall
2	Bass	5.5	4.8	37.7	129.4
2	Catfish	[1](18.6)17.7	9.6	(68.6)56.6	264.0
4	Bass	18.1	9.7	37.6	123.6
4	Catfish	51.6	14.0	96.0	357.3
7	Bass	1.7	<1	8.5	26.3
7	Catfish	4.6	<1	7.4	5.9
8	Bass	2.7	2.5	8.2	12.7
8	Catfish	4.2	48.4 (50.3)	20.3	224.4 (228.6)
9	Bass	7.3	-	18.8	-
9	Catfish	28.7	-	87.4	-
12	Bluegill	31.7	1.0	49.2	22.0
12	Catfish	13.8	4.3	11.6	10.6
Station 9 Spiked Bass	% Recovery *	105		43	
Station 8 Spiked Catfish	% Recovery*		99		82

[1] - Parentheses indicate laboratory duplicates

* - Corrected for natural body burdens

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

		PCB		DDD	
Station	Organism	Spring	Fall	Spring	Fall
2	Bass	79.7	136.3	<1	<1
2	Catfish	(308.9)294.3	220.7	(<1) 1.7	<1
4	Bass	121.2	313.2	<1	<1
4	Catfish	59.0	408.3	<1	<1
7	Bass	<1	185.2	2.0	<1
7	Catfish	15.9	<1	<1	<1
8	Bass	27.2	64.9	5.3	<1
8	Catfish	202.8	<1 (3.4)	<1	118.4 (115.7)
9	Bass	340.9	-	46.4	-
9	Catfish	679.0	-	<1	-
12	Bluegill	4.2	23.5	10.5	<1
12	Catfish	3.9	150.9	19.8	<1
Station 9 Spiked Bass					
	% Recovery			102	
Station 8 Spiked Catfish					
	% Recovery				100

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

Station	Organism	DDE Spring	DDE Fall	DDT Spring	DDT Fall
2	Bass	<1	65.7	7.5	44.2
2	Catfish	(<1) 1.2	160.3	(38.0)33.5	196.5
4	Bass	34.6	175.7	22.1	179.8
4	Catfish	44.2	3.5	100.5	24.3
7	Bass	5.7	41.4	1.1	10.4
7	Catfish	5.4	8.1	2.7	<1
8	Bass	2.9	28.9	19.1	2.5
8	Catfish	<1	393.7 (438.0)	18.3	291.8 (298.3)
9	Bass	65.5	-	178.7	-
9	Catfish	<1	-	181.1	-
12	Bluegill	18.2	9.4	17.0	5.1
12	Catfish	56.8	32.7	37.5	6.7
Station 9 Spiked Bass % Recovery		98		100	
Station 8 Spiked Catfish % Recovery			102		100

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

Station	Organism	Lindane Spring	Lindane Fall	Heptaclor Spring	Heptaclor Fall
2	Bass	<1	1.6	2.4	2.2
2	Catfish	(<1) <1	9.5	(3.2) 3.4	<1
4	Bass	4.3	7.8	4.3	3.9
4	Catfish	8.7	11.6	8.7	5.5
7	Bass	<1	1.3	<1	<1
7	Catfish	<1	<1	<1	<1
8	Bass	<1	1.6	14.8	<1
8	Catfish	3.0	3.0 (4.0)	<1	7.5 (7.0)
9	Bass	9.5	-	9.6	-
9	Catfish	<1	-	14.0	-
12	Bluegill	<1	1.3	4.2	<1
12	Catfish	<1	2.5	10.7	<1
Station 9 Spiked Bass % Recovery		84		94	
Station 8 Spiked Catfish % Recovery			97		120

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

		Endrin		Mirex	
Station	Organism	Spring	Fall	Spring	Fall
2	Bass	3.6	27.3	<1	<1
2	Catfish	(6.0) 6.5	<1	(<1) <1	<1
4	Bass	12.3	28.3	7.0	<1
4	Catfish	<1	3.7	21.5	121.0
7	Bass	3.0	<1	27.4	<1
7	Catfish	3.5	<1	54.2	<1
8	Bass	14.9	<1	4.1	<1
8	Catfish	4.5	39.6 (42.3)	<1	<1 (<1)
9	Bass	21.1	1.0	86.4	-
9	Catfish	23.7	<1	<1	-
12	Bluegill	11.9		33.2	<1
12	Catfish	3.6		31.0	<1
Station 9 Spiked Bass % Recovery				97	
Station 8 Spiked Catfish % Recovery					158

APPENDIX G-3

Hartwell Lake Tissue Analysis

Organics in Fish Tissues

Total ug/kg wet weight

		Toxaphene		Dieldrin	
Station	Organism	Spring	Fall	Spring	Fall
2	Bass	24.8	<1	7.9	41.8
2	Catfish	(<1) <1	<1	(42.3)40.2	42.7
4	Bass	<1	<1	12.4	<1
4	Catfish	<1	<1	29.5	<1
7	Bass	<1	<1	1.1	<1
7	Catfish	19.8	<1	2.7	<1
8	Bass	<1	<1	6.2	<1
8	Catfish	<1	383.0 (332.7)	44.8	<1 (<1)
9	Bass	218.8	-	58.6	-
9	Catfish	<1	-	16.9	-
12	Bluegill	62.1	<1	1.6	<1
12	Catfish	<1	<1	12.2	<1
Station 9 Spiked Bass					
	% Recovery	75		132	
Station 8 Spiked Catfish					
	% Recovery		100		84

APPENDIX G-4

Hartwell Lake Tissue Analysis

Organics in Mollusk Tissues

Total ug/kg wet weight

Station	Organism	Dieldrin Spring	Dieldrin Fall	Toxaphene Spring	Toxaphene Fall
2	L Clams	-	<1	-	30.8
2	S Clams	-	<1	-	66.6
4	L Clams	<1	<1	<1	<1
4	L Clams	<1	-	<1	-
4	S Clams	-	<1 (<1)	-	<1 (<1)
7	L Clams	(13.0)1.91	<1	(19.9)20.3	<1
7	S Clams	-	<1	-	18.4
8	L Clams	<1	<1	43.5	<1
8	S Clams	<1	<1	186.0	<1
9	S Clams	14.3	<1	<1	11.7
12	Crawfish	<1	<1	<1	<1
Station 7 Spiked Clam	% Recovery	124		70.6	
Station 4 Spiked Clam	% Recovery		105		75.0

APPENDIX G-4

Hartwell Lake Tissue Analysis

Organics in Mollusk Tissues

Total ug/kg wet weight

Station	Organism	DDE Spring	DDE Fall	DDT Spring	DDT Fall
2	L Clams	-	2.72	-	<1
2	S Clams	-	22.8	-	38.3
4	L Clams	30.5	1.88	5.5	5.1
4	L Clams	16.8	-	4.3	-
4	S Clams	-	11.3 (9.2)	-	4.7 (11.6)
7	L Clams	(3.1) 2.8	<1	(5.7) 5.0	1.7
7	S Clams	-	3.16	-	2.7
8	L Clams	21.5	3.1	32.7	1.5
8	S Clams	57.9	8.7	23.8	14.9
9	S Clams	21.1	2.19	1.1	5.1
12	Crawfish	28.9	13.3	3.2	<1
Station 7 Spiked Clam % Recovery		92.1		43.0	
Station 4 Spiked Clam % Recovery			104.2		154

APPENDIX G-4

Hartwell Lake Tissue Analysis

Organics in Mollusk Tissues

Total ug/kg wet weight

		PCB		DDD	
Station	Organism	Spring	Fall	Spring	Fall
2	L Clams	-	<1	-	<1
2	S Clams	-	10.3	-	4.67
4	L Clams	141.0	451.0	<1	<1
4	L Clams	256.0	-	<1	-
4	S Clams	-	42.0 (36.3)	-	<1 (<1)
7	L Clams	(<1) <1	<1	(<1) <1	<1
7	S Clams	-	<1	-	1.27
8	L Clams	57.1	15.1	<1	<1
8	S Clams	828.0	86.3	1.31	<1
9	S Clams	183.0	22.9	<1	<1
12	Crawfish	133.0	64.3	<1	<1
Station 7 Spiked Clam					
	% Recovery			41.8	
Station 4 Spiked Clam					
	% Recovery				56.2

APPENDIX G-4

Hartwell Lake Tissue Analysis

Organics in Mollusk Tissues

Total ug/kg wet weight

Station	Organism	Chlordane Spring	Chlordane Fall	Mirex Spring	Mirex Fall
2	L Clams	-	4.4	-	<1
2	S Clams	-	41.0	-	<1
4	L Clams	20.1	<1	<1	<1
4	L Clams	17.2	-	<1	-
4	S Clams	-	<1 (<1)	-	<1 (<1)
7	L Clams	(9.6) 5.8	3.5	(<1) <1	<1
7	S Clams	-	3.3	-	<1
8	L Clams	7.7	4.8	<1	<1
8	S Clams	84.8	20.3	<1	<1
9	S Clams	15.9	11.8	<1	<1
12	Crawfish	30.9	5.0	<1	<1
Station 7 Spiked Clam	% Recovery	82.5		36.3	
Station 4 Spiked Clam	% Recovery		66.7		93.8

APPENDIX G-4

Hartwell Lake Tissue Analysis

Organics in Mollusk Tissues

Total ug/kg wet weight

		ndane		Heptaclor	
Station	Organism	Spring	Fall	Spring	Fall
2	L Clams	-	<1	-	<1
2	S Clams	-	<1	-	3.17
4	L Clams	<1	<1	<1	<1
4	L Clams	<1	-	1.37	-
4	S Clams	-	<1 (<1)	-	<1 (<1)
7	L Clams	(<1) <1	<1	(<1) <1	<1
7	S Clams	-	<1	-	<1
8	L Clams	<1	<1	1.56	<1
8	S Clams	<1	<1	5.75	<1
9	S Clams	<1	<1	1.52	<1
12	Crawfish	<1	<1	3.39	1.25
Station 7 Spiked Clam	% Recovery	125		44.5	
Station 4 Spiked Clam	% Recovery				

APPENDIX G-5

Tissues

% Recovery for Metals

Station	Organism	Cd	Cr	Zn	Pb	As	Se
2	April Catfish	96	141	157	106	155	<2
2	April Bass	53	59	77	39	114	<2
2	Sept. Clam	100	79	105	65	49	<2
4	April Catfish					107	<13
4	April Clam					71	70
7	April Catfish					104	40
7	April Bass	81	77	88	26		
7	Sept. Catfish	76	103	95	40	105	40
8	April Bass	84	78	110	70		
8	Sept. Clam	100	92	99	25	69	<3
9	April Clam	91	83	118	53		
9	April Bass					102	<3
12	April Catfish	84	63	70	65	110	<3
12	April Bluegill	86	88	98	68	93	<3
	Average	86	90	102	56	109	*
Method Recovery Spike**		100	86	110	50	107	95

*Explained in text

** Average of 7 Recovery Checks

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